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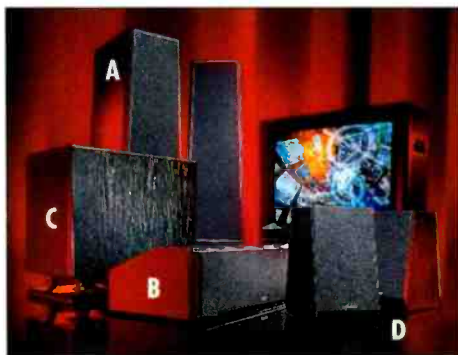
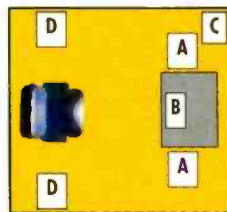
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Matthew Polk
Co-founder, Polk Audio



Cover

One dealer's choice for a \$5,000 home theater includes ProScan TV and VCR, Mirage speakers, Pioneer CD/Laserdisc player, and Yamaha A/V receiver. We show the system, for a young, single techie, with Domani's Bernini A/V rack from Terk Technologies. See page 49 for more.

Photograph by Dan Wagner

Stereo Review

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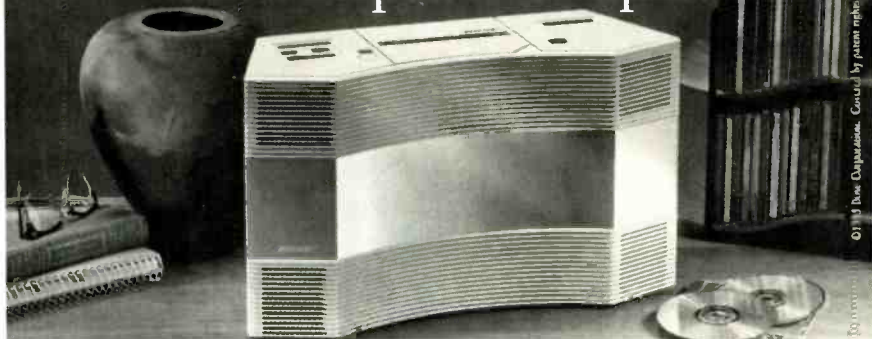


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— excerpts from *Audio Magazine*, by Anthony H. Cordesman

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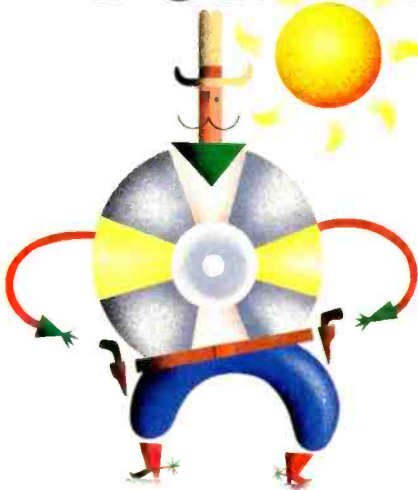
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BULLETIN

BY BOB ANKOSKO
AND WILLIAM LIVINGSTONE



SHOWDOWN AT THE DVD CORRAL?

Despite repeated calls for a unified launch next year of an advanced digital videodisc (DVD) system that uses CD-size discs, a format war continues to brew between rival camps headed up by Toshiba and Time Warner on one side, Sony and Philips on the other. Industry insiders fear that the introduction of two

incompatible formats will create consumer confusion. Unlike VHS and Beta, which duked it out in the early 1980's over obvious differences between the formats, the DVD rivals use similar 5-inch discs and offer similar performance. Both, for example, are compatible with existing CD's, can put a full-length film on one side of a disc, deliver better-than-laserdisc picture quality, and support six-channel soundtracks.

The Toshiba-Time Warner SD-DVD (Super Density Digital Video Disc) is backed by seventeen companies, including Panasonic, RCA, Pioneer, JVC, MCA, and MGM/UA. The SD-DVD alliance plans a mid-1996 launch of a \$500 player. The Sony-Philips MMCD (Multimedia CD) is supported by Aiwa, Marantz, Columbia Pictures, PolyGram, computer maker Gateway 2000, and a number of computer-peripheral makers.

A/V DIGEST

Two new "commercial-free" VCR's from RCA — including a \$499 stereo hi-fi model — contain a chip that senses commercials and skips over them when it's recording. RCA also announced plans to market a D-VHS VCR in mid-1996. The new VHS-compatible format can record compressed "bitstream" data from digital broadcast sources like the DirecTV satellite service but cannot make digital recordings from an analog source. . . . Tracer Technologies of Dallastown, Pennsylvania, is now shipping its Digital Audio Reconstruction Technology (DART), a computer software package designed "to remove all surface noise, pops, clicks, and other audio disturbances

from any audio source." Price: \$399. Call 717-741-0200 for more information. . . . JVC has developed a Dolby Pro Logic-based system called 3D-Phonic that creates surround-sound effects using only two speakers. . . . Pioneer plans to introduce a \$2,000 CD recorder, about half the cost of its PDR-09 recorder that came out last fall.

WINNERS

The Academy of Country Music has presented awards to Reba McEntire (top female vocalist and entertainer of the year), Alan Jackson (top male vocalist), and the Mavericks (top vocal group). The award for top new female vocalist went to Chely Wright, and the top new male vocalist, Tim McGraw, also

won the award for album of the year with his "Not a Moment Too Soon."

At ASCAP's Pop Music Awards, *I Swear* by Gary Baker and Frank Myers was voted song of the year. At BMI's similar event, *Breathe Again* was named the year's most-performed BMI song.

CLASSICAL CD-ROM'S

Music Pen and Delta Music have launched a 70-disc multimedia classical-music series on the LaserLight label. You can play the music alone on an ordinary CD player or pop the disc into a multimedia PC with a CD-ROM drive and browse through program notes, video footage of the composer's native country, or the score, which you can even print out.

The first fifteen discs — including Beethoven's nine symphonies, Vivaldi's *Four Seasons*, and Bach's "Brandenburg" Concertos — are now available for less than \$10 each. Another twenty titles are promised before the end of the year.

RDS BLITZ

The Electronic Industries Association (EIA) plans to spend \$1 million to equip 500 FM radio stations in the nation's top 25 markets with Radio Data System (RDS) encoders. That number is in addition to the 250 stations across the country already equipped to send RDS text messages such as the station's format and automatic traffic reports. In exchange for a free encoder, the EIA is asking each station for advertising time to promote the technology. The EIA's goal is to establish nationwide RDS capability by next spring. Denon, Delco, and Pioneer are helping to fund the project.

MUSIC NOTES

The director Tim Burton (*Beetlejuice*, *Batman I and II*) is planning a rock musical, starring Tom Petty and the

Heartbreakers, that is being described as a cross between *This Is Spinal Tap* and the Beatles' *A Hard Day's Night*. . . . PC Computing magazine has named record distributor Allegro Imports' World Wide Web page (<http://www.teleport.com/~allegro>) one of the 101 best of the 50,000 Web sites on the Internet. It features selections from Allegro's monthly jazz and classical releases, including 2-minute audio clips. . . . BMG has released "Out Classics," a CD that offers 75 minutes of music by "eight of the world's greatest composers who just happen to be gay." The outted octet are Barber, Bernstein, Britten, Chopin, Copland, Saint-Saëns, Schubert, and Tchaikovsky.

AUTOSOUND ANNEX

Blaupunkt is scoping out the U.S. market potential for the KeyCard security system it now offers on several car stereo head units in Europe. To activate a KeyCard-protected head unit, you must first insert a credit-card-size "key" into a slot on its front panel. The card also contains a nonvolatile memory for storing favorite radio presets and a variety of control settings, including volume, bass, and treble.

BLOCKBUSTERS

According to the Recording Industry Association of America (RIAA), Bruce Springsteen's "Born in the U.S.A.," with sales of 15 million units, is now tied with Boston's "Boston" for third place on the list of all-time best-selling albums, behind Michael Jackson's "Thriller" (24 million) and Fleetwood Mac's "Rumours" (17 million).

In addition, the soundtrack from *The Bodyguard*, which features Whitney Houston and other artists, has reached sales of 14 million, making it the best-selling album of the 1990's so far and the best-selling soundtrack of all time. □

ILLUSTRATION BY TERRY ALLEN

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- Audio Ideas Guide on the Eclipse/BP

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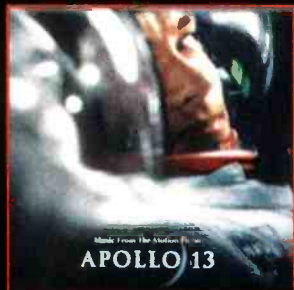
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LETTERS

AR 303 and AR-3a

I've been reading Julian Hirsch's test reports in your magazine for more than thirty years. Reading his report on the new AR 303 speakers in June was like reading a letter from a very trusted old friend.

It was appropriate that it was for an Acoustic Research product. I bought my first piece of AR equipment in the 1960's, mainly because of Mr. Hirsch's glowing report, and since then I've bought a number of other AR products. And Dahlquist. And Kenwood. And Sony. And Carver. And . . .

Mr. Hirsch's thoughtful reviews have sparked my interest in clean and honest sound and enabled me to get the best value for my dollar. Often I've felt like a kid pressing his nose against the candy store window, but sometimes even the sweet tantalizing whiffs can be satisfying, and his reviews are always a pleasure to read.

RON HARDCASTLE
Los Angeles, CA

Julian Hirsch's test report on the Acoustic Research AR 303 speaker (June) left me with some questions. Much of it is devoted to establishing that the AR 303 sounds much like the AR-3a. ". . . although the drivers are all newly designed for much better performance . . ." How can "much better performance" sound the same?

GERARD HILL
North Eastham, MA

Julian Hirsch replies: That the drivers were designed to perform "much better" does not necessarily mean that the sound in any particular music system will be perceived as improved to the same degree. Room characteristics, program material, and individual preferences can (and do) have a major effect on perceived sound quality.

I was astonished by Julian Hirsch's statement that the midrange driver and tweeter in the "mint condition" AR-3a's he used in his comparison with the new AR 303 were too bright and had to have their outputs reduced to achieve balanced response. I still use my AR-3a's, and they have always required some boost from the treble control to reproduce the higher frequencies properly. I have tested the response of my system over the years, most recently with an audio analyzer and a CD with a frequency sweep. Using 1 kHz as a reference, the midrange driver shows a significant peak at 700 Hz, holds the reference level from 1 to 2 kHz, and then declines steadily to -9 dB at about 5 kHz. The tweeter then takes over, and its response increases to about -5 dB at 9 kHz, remains steady to about 12 kHz, and then

declines rapidly and is effectively gone after 14 kHz.

EDWARD S. GARNER
Berkeley, CA

Julian Hirsch replies: Although I recall that in their time AR-3a speakers generally sounded "better" (whatever that may mean) with the treble set to maximum, I stand by my comments. If there is one thing I have learned in forty years of speaker testing, it is that no "response measurement" can tell you much about the sound of a speaker (unless it is seriously inferior or defective). Sweeping frequency-response measurements in a live room are highly unreliable indicators in any case; their chief value is for comparison between speakers tested under identical conditions (or nearly so). While Mr. Garner's measurements may have some validity for his speakers in his room, they are not necessarily valid for the ones I tested in my room.

Nipper's Breed

My letter that you kindly published in the February issue was followed by one from reader Thomas B. Liguori, who wants the world to know that the famous His Master's Voice dog, Nipper, was in reality a Jack Russell terrier. Wrong! Nipper was a bull terrier, rather common in England. His broad chest and short snout are not characteristic of the Jack Russell, as a photo comparison easily reveals.

OLIVER BERLINER
Beverly Hills, CA

AC-3 Options

I am very excited by the reviews of the new Dolby Surround AC-3 Digital format and would like to upgrade to it sometime in the future. In "Digital Surround Comes Home" in May, Michael Riggs said that sometime next year it might be possible to purchase for as little as \$500 a component that could play not only the new digital videodiscs (DVD) but also standard CD's and maybe even some standard laserdiscs. If I can only budget for a new player and not an AC-3 preamp/receiver, would the DVD/CD/laserdisc player work with my Pro Logic receiver? That is, would AC-3-encoded discs on the new player still send the standard Pro Logic signal to the receiver? Also, what are the chances of an affordable onboard AC-3 decoder?

BRYON GRANMO
Pacific Grove, CA

We expect that any digital videodisc player will also be able to generate a matrixed signal decodable by Pro Logic equipment from the multichannel AC-3 encoding on a

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DVD, so a new player should work fine with your old receiver. Of course, you won't obtain the full benefit of the new technology. Yamaha has said it will introduce an outboard AC-3 decoder for under \$600, and we assume there'll be others as well.

Troubleshooting

I enjoyed Daniel Kumin's "Troubleshooting" in June, but he didn't mention one problem that can occur in several different types of equipment, including TV sets and A/V receivers, and has an easy cure: When a momentary power loss occurs, the equipment comes back on in an abnormal mode, and the remote control will not operate properly. Turning the equipment off and back on does not correct the problem; it must be unplugged so that the logic circuits will reset properly.

DEXTER BOLENDER
Deltona, FL

"Troubleshooting" had many excellent tips for saving trips to the repair shop, but VCR head-cleaning tapes should be avoided like the plague. Repeated use of these abrasive tapes can do much more long-term damage than short-term good. I work in a store that repairs VCR's, TV's, and the like, and it is always apparent when someone has abused a VCR by subjecting the heads to a cleaning tape; the head drum is dull, pitted, and rough to the touch. A much better solution is to use a cleaning kit with chamois swabs and a cleaning solution. With such a kit you can also clean the rest of the tape path, like the capstans and pinch-rollers, which can become quite filthy, definitely affecting performance.

BRAD PALMER
Winnemucca, NV

Nonabrasive head-cleaning cassettes are available and should do no damage if used as directed and only when necessary.

Corrections

The price given for Carver's A-400x power amplifier in July "New Products" was incorrect. The correct price is \$685, as stated in this month's test report (page 38).

In May "Classical Music," the review of Frans Welser-Möst's recording of Bruckner's Fifth Symphony gave the wrong catalog number. The CD is EMI 55125. □

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

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*Paradigm Atom, Steve Stone
Stereophile Vol. 17 No. 9 (Sept/94)*

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NEW PRODUCTS



▲ AIWA

Dolby S noise reduction and a dual-capstan "quick-response" tape mechanism are among the key features of Aiwa's AD-S950 three-head cassette deck. Other highlights include a bias fine-tune control, Dolby HX Pro headroom-extension circuitry, Dolby B and C noise reduction,

a recording calibration system, a music sensor for quickly locating selections, a repeat mode, and a remote control. Wow and flutter is given as 0.035 percent. Price: \$500. Aiwa America, Dept. SR, 800 Corporate Dr., Mahwah, NJ 07430.

• Circle 120 on reader service card

LEGACY ▶

Legacy's 67-inch-tall Whisper speaker has ten drivers in a rosewood cabinet with two baffles. The front baffle holds two 15-inch woofers, four 7-inch midrange drivers, a dome tweeter, and a 4-inch ribbon supertweeter. The second baffle, 2¾ inches behind the first, holds two more 15-inch woofers. The low-frequency limit is given as 22 Hz. An outboard processor to compensate for room anomalies is included. Available factory-direct for \$12,500 a pair from Reel to Real Designs, Dept. SR, 3021 Sangamon Ave., Springfield, IL 62702; phone, 1-800-283-4644.

• Circle 121 on reader service card



▲ CUSTOM WOODWORK & DESIGN

CWD's Insights Collection is a line of modular A/V cabinets from 2 to 4 feet wide and 2½ to 3½ feet high. Options include speaker modules with fabric grilles, component cabinets with adjustable shelves, media storage units with slide-out trays, and TV cabinets for screens up to 50 inches. The veneered,

solid-wood cabinets come in contemporary style in natural maple (shown) or black, or in traditional style in light or medium oak. Prices range from \$225 to \$1,000 per cabinet. Custom Woodwork & Design, Dept. SR, P.O. Box 8, North Reading, MA 01864-0008.

• Circle 122 on reader service card

▼ ORION

Described as Orion's ultimate car woofer line, the NT (Ntense) series is available in 8-inch (\$220), 10-inch (\$265), 12-inch (\$325), and 15-inch (\$390) sizes. All are rated to handle 1,000 watts of continuous power except the 8-incher, which is rated at 500 watts. Common features

include a long-throw voice coil, a carbon-fiber cone, a die-cast basket, and gold-plated binding posts. A slightly more expensive dual-voice-coil version is available for each model. Orion, Dept. SR, 113 W. Julie Dr., Tempe, AZ 85283.

• Circle 123 on reader service card



NEW PRODUCTS



▲ PINNACLE

Space saver: Designed to be tucked up and away in a ceiling corner, Pinnacle's Pyramid speaker teams a 2-inch tweeter and a 3½-inch woofer with a high-temperature voice coil in a triangular cabinet measuring 14 inches on each side. Covered by a seven-year warranty, the

8-ohm system is said to play down to 60 Hz and to handle up to 150 watts of power. Mounting hardware and a white cloth grille (not shown) are supplied. Price: \$300 a pair. Pinnacle, Dept. SR, 255 Executive Dr., Suite 310, Plainview, NY 11803.

• Circle 124 on reader service card



◀ AUDIOSOURCE

AudioSource's 9-inch-tall Project One indoor/outdoor speaker combines a magnetically shielded 4-inch woofer and a ½-inch tweeter in a black, white, or platinum-gray polymer enclosure. It's rated down to 60 Hz and has an integral pivoting bracket that doubles as a stand. Price: \$299 a pair. AudioSource, Dept. SR, 1327 N. Carolan Ave., Burlingame, CA 94010.

• Circle 126 on reader service card

KENWOOD ▶

Kenwood's KDC-PS900 car CD tuner can control one or two remote changers, including the company's new KMD-C80 six-disc MD changer. Highlights include a detachable faceplate, twenty-four

AM/FM presets, three line-level stereo outputs, and a wireless remote control. Price: \$600. Kenwood, Dept. SR, P.O. Box 22745, Long Beach, CA 90801.

• Circle 128 on reader service card



▲ BLAUPUNKT

At 9⅞ x 7 x 2½ inches, Blaupunkt's CDC-RF6ir six-disc car CD changer is small enough to fit in such tight spaces as under a seat or in the glove compartment. The changer's wired control panel has a large LCD window, and an RF (radio-frequency) modulator simplifies installation by

broadcasting the CD signal to the car's FM radio (which must be tuned to 88.7 or 89.1 MHz). An optional credit-card-size remote control is also available. Price: changer, \$430; remote, \$40. Blaupunkt, Robert Bosch Corp., Dept. SR, 2800 S. 25th Ave., Broadview, IL 60153.

• Circle 125 on reader service card



▲ MICRO MULTIMEDIA LABS

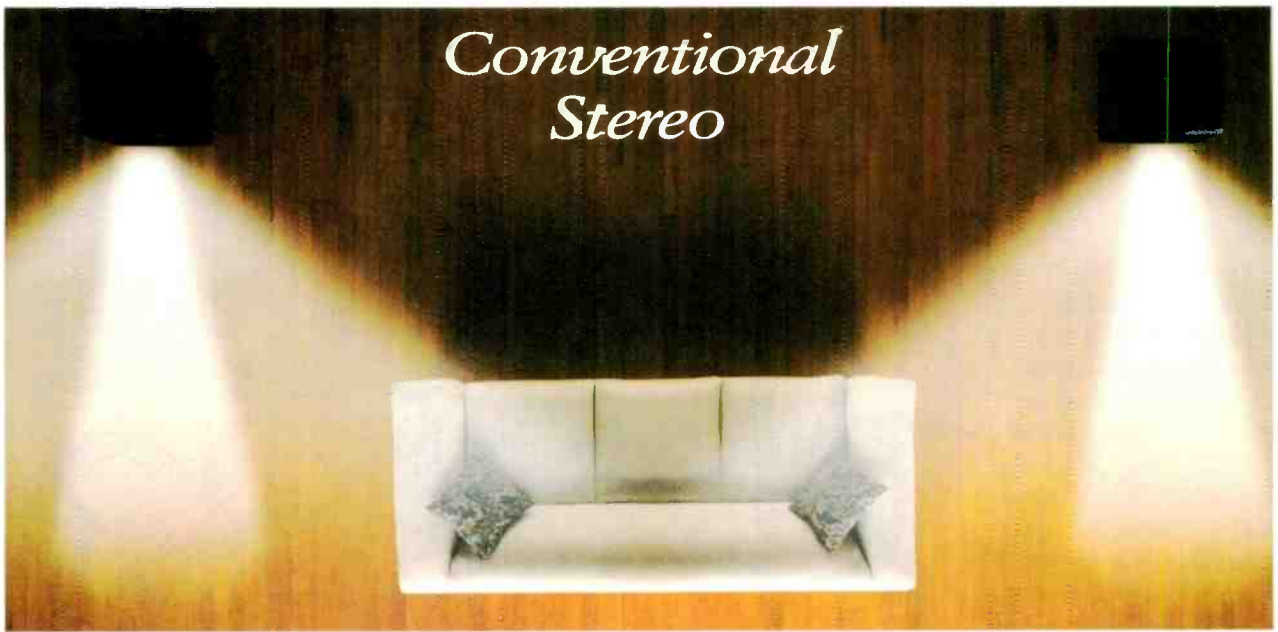
The TC 1490SP computer speaker system from Micro Multimedia Labs comprises a pair of 9¼-inch-tall two-way speakers and an integrated amp rated to deliver 40 watts per channel. The amplifier sports a five-band graphic equalizer, a tone-defeat control, a

built-in microphone, a mike input with gain control, a headphone output, and a subwoofer output with a level control. Price: \$250. Micro Multimedia Labs, Dept. SR, 458 Main St., Reisterstown, MD 21136.

• Circle 127 on reader service card



Conventional Stereo



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NEW PRODUCTS

SANUS ▶

The Sanus Systems Euro Foundations series of steel speaker stands consists of three models: the 16-inch EF16 (\$80 a pair), the 24-inch EF24 (\$80 a pair), and the adjustable 24- to 40-inch EF32 (\$100 a pair, shown with Polk Audio's RM3000 speaker). All stands have rubber isolation pads, adjustable floor spikes, a concealed wire path, and a sand-fillable base. The EF32 also has a tilt adjustment and comes with a variety of bolts for securing popular brands of satellite speakers. Sanus Systems, Dept. SR, 1973 W. County Rd. C2, St. Paul, MN 55113.

• Circle 133 on reader service card



▲ SONY

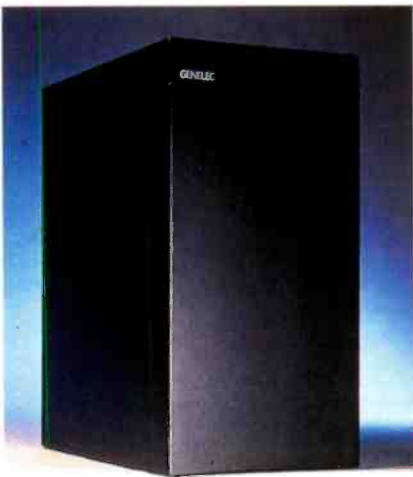
For CD-ROM on the go, Sony's PRD150 CD-ROM Discman is a double-speed drive that weighs just 10 ounces. It plays MPC-2 multimedia discs, audio CD's, and Photo CD's. Two AA batteries are said to provide 1½ hours of CD-ROM operation or 2½ hours of

audio-only playback. Supplied accessories include headphones, a PCMCIA interface card and cable for connecting to a laptop computer, an AC power adaptor, and installation software. Price: \$500. Sony, Dept. SR, 1 Sony Dr., Park Ridge, NJ 07656.

◀ GENELEC

Genelec's Model 1092A powered subwoofer combines two 8-inch drivers, a two-way crossover, and a 180-watt power amplifier in a 25 x 13 x 20-inch black cabinet. Highlights include balanced inputs and outputs and controls for bass rolloff and input sensitivity. Frequency response is given as 32 to 80 Hz ±2.5 dB and maximum SPL as 115 dB. Price: \$2,199. Genelec, distributed by QMI, Dept. SR, 25 South St., Hopkinton, MA 01748.

• Circle 134 on reader service card



▲ PANASONIC

Mobile message center: Panasonic's CQ-R535 car cassette receiver has a built-in microphone and a 20-second memory chip for recording voice messages (it can also record from the radio or a cassette). The head unit has a

detachable face and CD-changer controls. Power is rated as 30 watts each to four channels. Price: \$299. Panasonic, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.

• Circle 135 on reader service card

DB SYSTEMS ▶

Designed as an add-on for components that don't have phono sections, DB Systems' DB-8 phono preamp is said to perform within 0.04 dB of RIAA specs. It has a separate wall-mount DC power supply to reduce hum and includes a 6-foot umbilical cord.

Gain is given as 37 dB (said to be optimal for most moving-magnet cartridges). Available direct for \$150 (plus \$4 shipping) from DB Systems, Dept. SR, P.O. Box 460, Rindge Center, NH 03461; 603-899-5121.

• Circle 136 on reader service card





2 CDs 1

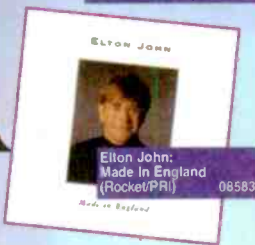
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Sheryl Crow: Tuesday Night Music Club (A&M) 03061



Elton John: Made In England (Rocket/PRI) 08583



The Lion King/Sdtrk. (Disney) 03533



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

World Of Morrissey (Sire) 08125

Soul For Real: Candy Rain (Uptown/MCA) 08126

Collective Soul (Atlantic) 08133

Juliana Hatfield: Only Everything (Mammoth/Atlantic) 08148

The Best Of New Order (Gowest/Warner Bros.) 08153

Matthew Sweet: 100% Fun (Zoo Entertainment) 08166

Jamie Walters (Atlantic) 08218

Spyro Gyra: Love & Other Obsessions (GRP) 08224

Eric Clapton: The Cream Of Clapton (Polydor) 08241

Skid Row: Subhuman Race (Atlantic) 08252

Linda Ronstadt: Feels Like Home (Elektra) 08255

Pulp Fiction/Sdtrk. (MCA) 06396 #

Channel Live: Station Identification (Capitol) 08283

Come Together: America Salutes The Beatles (Liberty) 08310

Music Inspired By The Lion King: Rhythm Of The Pride Lands (Walt Disney) 08318

Adina Howard: Do You Wanna Ride? (EastWest) 08354

Oi Dirty Bastard: Return To The 36 Chambers: The Dirty Version (Elektra) 08447 #

E-40: In A Major Way (Jive) 08455 #

Classic Disney: 60 Years Of Musical Magic Vol. 1 (Walt Disney) 08692

Boyz II Men: Cooleyhighharmony (Motown) 10930

The Best Of Miles Davis: The Capitol/Blue Note Years (Blue Note) 11000

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

George Strait: Lead On (MCA Nashville) 15841

- Green Day: Dookie (Reprise) 02753 #
- Barry White: The Icon Is Love (A&M) 06185
- The Sound Of Music/Sdtrk. (RCA) 00046
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- Best Of Dire Straits: Money For Nothing (Warner Bros.) 00713
- Fleetwood Mac: Greatest Hits (Warner Bros.) 00796
- The Essential Charlie Parker (Verve) 00902
- Vivaldi Greatest Hits (RCA) 00956
- Stone Temple Pilots: Core (Atlantic) 00981
- Tina Turner: Simply The Best (Capitol) 01195
- James Brown: 20 All-Time Greatest Hits (Polydor) 01342
- Creedence Clearwater Revival: Chronicle: 20 Greatest Hits (Fantasy) 01520
- Jimi Hendrix: The Ultimate Experience (MCA) 01527
- Salt-N-Pepa: Very Necessary (London) 01595
- Gershwin Plays Gershwin: The Piano Rolls (Elektra/Nonesuch) 01675
- Snoop Doggy Dogg: Doggystyle (Interscope) 01692 #
- Black Sabbath: Master Of Reality (Warner Bros.) 01863
- Ace Of Base: The Sign (Arista) 02354
- Tom Petty & The Heartbreakers: Greatest Hits (MCA) 02390
- Counting Crows: August And Everything After (DGC) 02409
- Yanni: Live At The Acropolis (Private Music) 02477
- Soundgarden: Superunknown (A&M) 02515
- Sarah McLachlan: Fumbling Towards Ecstasy (Arista) 02536

- The Cranberries: No Need To Argue (Island) 06258
- Frank Sinatra: Duets II (Capitol) 06269
- Elton John: Greatest Hits (Polydor) 03077
- The Crow/Sdtrk. (Atlantic) 03173
- Norman Brown: After The Storm (MoJazz) 03282
- Jon Secada: Heart, Soul & A Voice (SBK) 03323
- Tracy Byrd: No Ordinary Man (MCA) 03339
- Vince Gill: When Love Finds You (MCA) 03350
- Louis Armstrong: All-Time Greatest Hits (MCA) 03399
- Carpenters: The Singles 1969-1973 (A&M) 04393
- Supertamp: Classics (14 Greatest Hits) (A&M) 04891
- John Mellencamp: Dance Naked (Mercury) 04906
- BLACKstreet (Interscope) 04922
- Dazed And Confused/Sdtrk. (Giant/Warner Bros.) 04944
- Soundgarden: Badmotorfinger (A&M) 05637
- Ella Fitzgerald: The Best Of The Songbooks: The Ballads (Verve) 05713
- The Tractors (Arista) 05721
- Ray Charles: The Best Of The Atlantic Years (Rhino) 05755
- Joshua Redman: Mood Swing (Warner Bros.) 05845
- Barry White: All-Time Greatest Hits (Mercury) 05866
- Brooks & Dunn: Waitin' On Sundown (Arista) 05888
- Amy Grant: House Of Love (A&M) 05902
- Seal (1994) (Warner Bros./Sire) 05907
- Weezer (DGC) 05943
- Anita Baker: Rhythm Of Love (Elektra) 05980

- Aerosmith: Big Ones (Geffen) 06271
- Clay Walker: If I Could Make A Living (Giant) 06165
- Jeff Foxworthy: You Might Be A Redneck ... (Warner Bros.) 06173
- The Manhattan Transfer: Tonin' (Atlantic) 06175
- Bon Jovi: Cross Road (Mercury) 06183
- David Arkenstone: Another Star In The Sky (Narada) 06221 #
- Brandy (Atlantic) 06266
- Jason's Lyric/Sdtrk. (Mercury) 06268
- Acoustic Alchemy: Against The Grain (GRP) 06270
- Megadeth: Youthanasis (Capitol) 06272
- The Best Of David Sanborn (Reprise) 06274
- Barbra Streisand: Hello Dolly (Philips) 06314
- Arthur Fiedler and the Boston Pops Orchestra: Salute to Disney (DG) 06329
- Jeff Lorber: West Side Stories (Verve) 06330
- Vanessa Williams: The Sweetest Days (Mercury) 06335
- TLC: CrazySexyCool (LaFace/Arista) 06352
- Mary J. Blige: My Life (MCA) 06362
- The Unplugged Collection, Vol. 1 (Warner Bros.) 06393
- Too Short: Cocktails (Jive/Dangerous Music) 06395 #
- ZZ Top: One Foot In The Blues (Warner Bros.) 06401
- Bryan Adams: Live! Live! Live! (A&M) 06497
- The Tribute To Elvis: It's Now Or Never (Mercury Nashville) 06498
- Real McCoy: Another Night (Arista) 06500
- GRP All-Star Big Band: All Blues (GRP) 06646
- Christian McBride: Gettin' To It (Verve) 06863
- Boys On The Slide/Sdtrk. (Arista) 06893
- Nirvana: Unplugged In New York (DGC) 06284
- Neal McCoy: You Gotta Love That! (Atlantic) 06904
- George Duke: Illusions (Warner Bros.) 06926
- Tom Scott: Night Creatures (GRP) 06928
- Shania Twain: The Woman In Me (Mercury Nashville) 06935
- Madonna: Bedtime Stories (Maverick/Sire) 06356
- Pat Metheny Group: We Live Here (Geffen) 06938
- Slash's Snakepit: It's Five O'Clock Somewhere (Geffen) 06950 #
- Elastica (Geffen) 08073
- Trisha Yearwood: Thinkin' (Geffen) 08083
- Belly: King (Reprise/Sire) 08122

CLASSIC ROCK ESSENTIALS



Eagles: Hotel California (Asylum) 30030

- The Doors: L.A. Woman (Elektra) 00215
- Steely Dan: Aja (MCA) 00409
- The Beach Boys: Pet Sounds (Capitol) 00513
- Jethro Tull: Thick As A Brick (Chrysalis) 01023
- Elton John: Goodbye Yellow Brick Road (Polydor) 03076
- The Who: Tommy (MCA) 03223
- Emerson, Lake & Palmer: Brain Salad Surgery (Victory) 05676 #
- David Bowie: Ziggy Stardust (Rykodisc) 10803
- Jackson Browne: Running On Empty (Elektra) 11056
- Fleetwood Mac: Rumours (Warner Bros.) 24025
- Blind Faith (Polydor) 25073 #
- Eric Clapton: Slowhand (Polydor) 25094
- Traffic: The Low Spark Of High Heeled Boys (Island) 25169
- Supertramp: Breakfast In America (A&M) 25246
- Jimi Hendrix Experience: Are You Experienced? (MCA) 25457
- Grateful Dead: American Beauty (Warner Bros.) 34539
- Van Morrison: Moondance (Warner Bros.) 64585
- The Band: The Last Waltz (Warner Bros.) 01636 #

- Reality Bites/Sdtrk. (RCA) 02555
- Grammy's Greatest Moments Vol. 1 (Atlantic) 02594
- The Mavericks: What A Crying Shame (MCA) 02601
- Ray Lynch: Deep Breakfast (Windham Hill) 02634
- Nine Inch Nails: The Downward Spiral (Interscope) 02767 #
- Frank Sinatra: Duets (Capitol) 03039
- Outkast: Southernplayalisticadillacmuzik (La Face) 03062 #
- Nanci Griffith: Flyer (Elektra) 05982
- Barry Manilow: Singin' With The Big Bands (Arista) 05989
- Alabama: Greatest Hits, Vol. III (RCA) 05996
- The Rippingtons: Sahara (GRP) 06008
- Eric Clapton: From The Cradle (Reprise) 06025
- Najee: Share My World (EMI) 06141
- The Notorious B.I.G.: Ready To Die (Bad Boy/Arista) 06160 #
- R.E.M.: Monster (Warner Bros.) 06164



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- En Vogue: Funky Divas (East West) 61717
- Megadeth: Countdown To Extinction (Capitol) 63340
- Yanni: In My Time (Private Music) 63900
- Bette Midler: Experience The Divine: Greatest Hits (Atlantic) 64291
- Elvis Presley: The Number One Hits (RCA) 72190
- The John Lennon Collection (Capitol) 73627
- The Police: Every Breath You Take—The Singles (A&M) 73924
- Steely Dan: Gold (MCA) 74339
- Frank Sinatra: Sinatra Reprise: The Very Good Years (Reprise) 80304
- ZZ Top: Greatest Hits (Warner Bros.) 83411
- Best Of The Grateful Dead: Skeletons From The Closet (Warner Bros.) 83892
- Neil Diamond: 12 Greatest Hits (MCA) 84050
- Nirvana: In Utero (Geffen) 90124 \$
- The Manhattan Transfer: Anthology: Down In Birdland (Rhino) 00146 \$
- The Who: Who's Better, Who's Best (MCA) 00790
- Allman Brothers Band: The Fillmore Concerts (Polydor) 01159 \$
- Rod Stewart: The Mercury Anthology (Mercury) 01161 \$
- David Bowie: The Singles 1969-1993 (Rykodisc) 01659 \$

- Aaron Neville: The Tooted Heart (A&M) 16655
- Windham Hill: The First Ten Years (Windham Hill) 02628 \$
- Woodstock '94 (A&M) 06315 \$*
- The Best Of The Commodores (Motown) 06875 \$
- Fantasia/Sdtrk. (Walt Disney) 17060 \$
- Rush: Chronicles (Mercury) 24059 \$
- Saturday Night Fever/Sdtrk. (Polydor) 34687 \$
- The Donna Summer Anthology (Casablanca) 43507 \$
- Madonna: The Immaculate Collection (Sire) 54164
- Melissa Etheridge: Yes I Am (Island) 35501
- Chuck Berry: The Great 28 (Chess) 64137
- The Best Of The Doors (Elektra) 70407 \$
- The Buddy Holly Collection (MCA) 84047 \$
- Prince: The Hits 1 (WB/Paisley Park) 02228 \$
- Lena Horne: Stormy Weather: The Legendary Lena (1941-1958) (RCA) 01784
- The Neville Brothers: Live On Planet Earth (A&M) 03065
- Huey Lewis & The News: Four Chords & Several Years Ago (Elektra) 03274

- The Chieftains: The Long Black Veil (RCA Victor) 06408
- The Best Of Aretha Franklin (Atlantic) 20078
- Paul Simon: Negotiations And Love Songs 1971-86 (Warner Bros.) 20461
- The Very Best Of Yes (Atlantic) 20671
- Aerosmith: Get A Grip (Geffen) 20814 \$
- Eric Clapton: Timepieces-Greatest Hits (Polydor) 23385
- Eagles: Greatest Hits 1971-1975 (Asylum) 23481
- Eric Clapton: Unplugged (Warner Bros.) 23690
- The Best Of The Beach Boys (Capitol) 23946
- Beastie Boys: Ill Communication (Capitol) 24717 \$
- Foreigner: The Very Best... And Beyond (Atlantic) 24722
- Stevie Wonder: Conversation Peace (Motown) 08069
- Stone Temple Pilots: Purple (Atlantic) 24738
- Gin Blossoms: New Miserable Experience (Atlantic) 24884
- The Steve Miller Band: Greatest Hits 1974-1978 (Capitol) 33199
- The Big Chill/Sdtrk. (Motown) 33970
- Moody Blues: Legend Of A Band (Greatest Hits) (Threshold) 34284
- Steve Winwood: Chronicles (Island) 34501
- John Coltrane: Giant Steps (Atlantic) 34589 \$
- B.B. King: Blues Summit (MCA) 34700
- Bryan Adams: So Far So Good (A&M) 34771
- Alan Jackson: Who I Am (Arista) 34793
- Allman Brothers Band: A Decade Of Hits 1969-1979 (Polydor) 35031

- Encomium: A Tribute To Led Zepplin (Atlantic) 08135
- Fourplay: Between The Sheets (Warner Bros.) 35074
- The Rodgers & Hammerstein Collection (MCA) 40015
- Mötley Crüe: Decade Of Decadence (Elektra) 40298
- John Michael Montgomery (Atlantic) 08251
- U2: The Joshua Tree (Island) 53501
- Bob Marley: Legend (Island) 53521
- Marvin Gaye: 15 Greatest Hits (Motown) 53534 \$
- The Cars: Greatest Hits (Elektra) 53702

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- Judy Garland: Judy At Carnegie Hall (Capitol) 01782 \$
- The George Benson Collection (Warner Bros.) 01858

CLASSICAL

- Górecki, Symphony No. 3 (Nonesuch) 00110 \$
- Pavarotti And Friends (London) 01451 \$
- Opera's Greatest Moments (RCA Victor Red Seal) 02581 \$
- Chant: The Benedictine Monks of Santo Domingo de Silos (Angel) 02957
- Kiri Sings Porter (Angel) 02958 \$
- Kronos Quartet: Night Prayers (Nonesuch) 06084 \$
- Pavarotti: The Early Years, Vol. 1 (RCA Victor Gold Seal) 06200 \$
- The Joy Of Bernstein (DG) 03212 \$
- Cecilia Bartoli: Mozart Portraits (London) 04923
- Vin Cilburn In Moscow (RCA Victor Red Seal) 05748
- Luciano Pavarotti: Pavarotti In Central Park (London) 08096
- James Galway: Wind Of Change (RCA) 05960
- Kronos Quartet: Night Prayers (Nonesuch) 06084 \$
- Pavarotti: The Early Years, Vol. 1 (RCA Victor Gold Seal) 06200 \$
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2 Send my selections on (check one only): CDs Cassettes

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(Indicate by number):

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4 I am always free to choose from any category, but I am most interested in the music category checked here (check one only):

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5. <input type="checkbox"/> CLASSICAL(1) Luciano Pavarotti James Galway	6. <input type="checkbox"/> JAZZ Pat Metheny Joshua Redman	7. <input type="checkbox"/> METAL Megadeth Testament	8. <input type="checkbox"/> R&B/DANCE Boyz II Men Mary J. Blige
9. <input type="checkbox"/> ALTERNATIVE The Cranberries Green Day			

5 Mr.
 Mrs.
 Ms. (PLEASE PRINT)

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TIME DELAY



30 Years Ago

No Sex Please (this is a family magazine): In the August 1965 Letters column, *Listen to the Warm* poet Rod McKuen commended Gene Lees for his “blunt” record reviews and *Hi-Fi/Stereo Review* for being “a magazine where you get the feeling that the reviewers and the advertising department aren’t sleeping together.”

Articles supporting the issue’s loudspeaker theme included John Milder’s “Basic Training for Speaker Shopping,” H. B. Morris’s “Extension Speakers and Center-Channel Techniques,” and George L.



**Altec Lansing’s
Bass Energizer, 1965**

Augspurger’s “The Magnet: Heart of the Loudspeaker.” Among the new products were Altec Lansing’s 100A Bass Energizer, a \$30 device said to compensate for low-frequency deficiencies in small speakers, and Concord’s R-2000 stereo tape deck (\$795). In test reports, Julian Hirsch appraised the Knight-Kit KG-870 integrated

amp (kit or factory-wired), which he called “superbly transparent.”

No Sex Please. Part 2: In his review of the Ray Charles Singers’ “Songs for Lonesome Lovers,” Gene Lees noted. “It will corrupt no morals, inspire no riots, assist no seductions.”



20 Years Ago

In his August 1975 editorial, William Anderson considered the results of an NEA/Harris Poll rating public respect for various professions. Ominously, critics landed at the bottom of the list, “after baseball players, sanitation workers, and gas-station attendants.”

New products included the Electrostatic Research ER-139, a three-way speaker with an unusual-looking array of eight electrostatic tweeters mounted around the circumference of a drum. In test reports, Hirsch-Houck Labs looked into the Wollensak 4766 cassette deck with decoding for Dolbyized FM broadcasts (\$429.95) and Pioneer’s SA-9900 amplifier, rated at 110 watts per channel, which Julian Hirsch said represented “the highest current state of development of integrated amplifiers.”

In Best of the Month, George Jellinek was pleased with the



**Electrostatic
Research ER-139
speaker, 1975**

first complete recording of Massenet’s *La Navarraise* (on Columbia), and Chris Albertson did a Jimmie Walker imitation after hearing “Clark Terry’s Big B-a-d Band Live” (on Vanguard): “consistently *dy-no-mite!*” In other reviews, Eric Salzman was let down by “The Orchestral Tubular Bells” by Mike Oldfield (“Gone are the cave-man grunts and groans”), and Joel Vance gave short shrift to the aptly titled “New Year. New Band. New Company” by bluesman John Mayall, saying, “Thank you very much, and good night.”

As Usual, Opinions Vary: In his review of Carly Simon’s “Playing Possum,” Peter Reilly called it “an almost continuous musical joy.” In his August column, however, Steve Simels declared himself in favor of “Carly Simon’s legs (but not her records).”

10 Years Ago

In a lead feature article, Ian G. Masters offered tips on

Carly Simon (with legs), 1975



troubleshooting audio gear, with special hints on eliminating that elusive hum. In other articles, David Ranada explained how color TV works for audiophiles adding hi-fi video to their systems, and Thomas R. Gillett



**Ortofon MC 100
phono cartridge, 1985**

laid out “The Case for Separate Components.” Among new products were Sony’s SL-HF400 Beta Hi-Fi VCR and Parasound’s CD400 cassette deck with Dolby B and C. Equipment tested by Julian Hirsch included Ortofon’s low-mass MC 100 moving-coil phono cartridge, which he described as having “a sweet, uncolored sound.”

No Sex Please. Part 3: One of the stars of Playboy Video’s “Girls of Rock & Roll” wrote to correct us about a June “Record Makers” item that identified a photo of her as Dagmar Petersen. Actually, she noted. “My name is Natalie Pace, and I’m not that particularly well endowed!”

— Steve Simels



SIGNALS

BY KEN C. POHLMANN

Recordaphobia

As everyone knows, the compact disc revolutionized the audio world. It's hard to believe that a decade ago we were adjusting the tracking weight on our turntables' tonearms and listening to clicks and pops. Similarly, the CD is transforming the computer industry. Under the aegis of multimedia, CD-ROM drives are becoming almost as ubiquitous as 3½-inch floppy drives. But the biggest news in the computer world is recordable CD (CD-R), the technology that lets you record on special "write-once" discs that can be played on any CD-ROM drive or a regular CD player. Industry observers predict huge sales of peripheral CD-R drives that play and record computer software as well as audio and video data. Ask yourself: Why mess with a drive that merely plays audio and ROM discs when you can buy one that also records them?

Events have taken this curious turn because the audio industry, the industry that invented the CD, has been extremely slow to adopt CD-R technology. One reason is timing: decision-makers have been waiting to see what will happen with two other fledgling digital recording formats, DCC and MD, but given their disappointing sales, one could argue that the yellow light for CD-R has now turned very green. Another reason is simple uncertainty — will the public embrace a write-once recording format that does not allow erasing? Ultimately, though, the matter boils down to the sticky question of recordability itself. Audio hardware companies, many with significant software interests, are loathe to introduce recordable CD because it might damage sales of pre-recorded discs and tapes. And manufacturers without software interests either bow to pressure from the recording industry or don't want to rock the boat. In short, the topic of recordable CD causes discomfort. The topic of erasable CD causes panic.

The computer industry, on the other hand, has always recognized the need for both. Partly because ownership of computer software and hardware concerns is more clearly differentiated, and partly because a computer inherently needs recordable, off-line storage, the industry has pioneered many digital recording me-

dia. Punched cards, punched tape, magnetic tape, floppy disks, hard disks, optical disks, and others are all testament to the computer industry's willingness to develop recordable media and accept reality — software that can be copied will be copied, legitimately and otherwise. CD-R is simply another fabulous way to record data, and the computer industry has endorsed it with vigor.

A number of manufacturers now offer peripheral CD recorders in both internal and external configurations. Given the appropriate software, home computer users can use a CD-R drive to record any digital data to CD in the same way they save data to a hard drive. How much do CD-R drives cost? They can be had for as little as \$1,500, and prices are dropping fast. Blank discs? Ten to fifteen bucks apiece, and dropping fast. Both 63-minute and 74-minute blanks are available. Not content with real-time recording, computer manufacturers have also introduced 2x, 4x, and 6x CD-R drives. Not insignifi-

While the computer industry forges ahead with CD-R, the audio industry is still plagued by fear of the format.

cantly, you also need a beefy computer to make high-speed recordings. Data must first be loaded into the computer's hard drive, and the drive must be able to output data continuously; some drives perform thermal recalibration, which interrupts the flow.

Meanwhile, as the computer industry forges ahead, the audio industry remains plagued by recordaphobia, the fear of introducing a new recording format that does not also introduce a new means to sell prerecorded music. To date, only a handful of audio manufacturers — including Marantz, Denon, and, most recently, Pioneer — have offered CD-R audio recorders. Tinges of that old phobia are still very evident. For example, thanks to the Audio Home Recording Act of 1992, all digital audio recorders and


blank audio media are subject to a tariff. These funds are intended to compensate copyright holders for losses — real or imagined — from home recording.

To prevent you from avoiding the tariff, audio CD-R recorders will not record to computer CD-R discs. Not surprisingly, although they are otherwise identical, audio CD-R's are much more expensive than computer CD-R's. Phobias being what they are, the audio industry has further agreed to supply only 63-minute audio blanks. So since you can't buy 74-minute recordable audio discs, and 74-minute computer blanks are incompatible, you're limited to 63 minutes of recording time. The point? Simple. To make it tough for you to record prerecorded albums, which often run longer than 63 minutes, even though the Home Recording Act affords you that right, you are paying a tariff for that right, and the copy you make is SCMS-encoded against further copying.

The result is, well, strange. The audio industry offers CD recorders, but wants to discourage you from using them to make recordings. That sort of brilliant logic, of course, is exactly what strangled the DAT format. But now consumers are left with an interesting option. Case in point: In 1989, as chief engineer for the Greater Miami Opera, I recorded a series of performances of *Die Walküre*. I used a PCM processor and VHS videotape as the recording medium. One of those performances was particularly fine, and recently I decided to transfer the data to CD, saving it from an obsolete format and deteriorating magnetic tape. I set up a consumer CD-R audio recorder.

Act I fit nicely onto a 63-minute blank. I split the long (95-minute) Act II over two blanks. Then I considered Act III. Its timing was 72 minutes, and I confronted the limit of 63 minutes for audio blanks — the music would fit on a 74-minute computer blank, but I would have to split it over two 63-minute audio blanks. Refusing to be held hostage to that limitation, I simply shoved aside the audio recorder, popped a 74-minute blank disc into my computer's CD-R drive, and recorded Act III.

The facts are crystal-clear: Unless the audio industry gets its act together and stops throwing sand in its own gears, millions of consumers will ignore its recorders and turn to their computers instead, just as I did. □



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CIRCLE NO. 23 ON READER SERVICE CARD

ON-SCREEN TV PROGRAM GUIDES

BY MARJORIE COSTELLO

Everybody's talking about the hundreds of TV channels the future will bring, yet most of us have trouble finding our way through the dozens of channels we already receive. Wouldn't it be great if you could see a list of the week's programming on your TV screen, complete with plot summaries and ratings for movies? Well, you *can* do that, and lots more, with StarSight, the first of several new on-screen program-guide services now (or soon to be) available.

Surfing with StarSight

StarSight, a subscription service launched last year by the Fremont, California, company of the same name, picks up where the cable preview channels leave off, while eliminating that recurrent search through piles of newspapers for the TV listings. When you turn your TV on, a box appears at the bottom of the screen showing the program's name, channel number, and time remaining. Similar information is displayed as you surf from channel to channel, so that you always know what's on at any moment, even during a commercial. Want more information about a show you've encountered? Hit the Star button on your StarSight remote and a program synopsis appears on screen, along with such other information as whether the program is broadcast in stereo. For movies, you also get a list of the key actors, the year of the film's release, and the MPAA rating.

If you're not big on channel surfing, hit the Guide button on the StarSight remote and a list of TV shows appears on screen in a colorful grid format; the selected channel is highlighted. To select another channel, you simply highlight its grid line using the remote and hit the Tune button. Like the TV listings in most newspapers, the

grid is arranged by time, channel, and day of the week, and it contains seven days' worth of information. To find out what's on during the next six days, you press a button on the remote to advance the grid. You can even access a single-channel guide that presents only the programming lineup for a particular channel. Or you can select a theme like movies, sports, or news and call up a grid that lists upcoming programs only in that category.

Beyond putting a wealth of programming information at your fingertips, the StarSight system provides a goof-proof recording feature: You highlight the show you want to record on the channel grid — even if it's on next week — and press the record button. The system then asks you to indicate whether you want to record a single show or a whole series (daily or weekly). As long as you remember to put a tape in your VCR, StarSight does the rest, automatically turning on your VCR and putting it in record mode at the proper time. The system even keeps track of up to twenty-one programs you've asked it to record; hit a button on the remote and up pops a list showing which upcoming pro-

grams have been scheduled to be recorded and when.

To receive the StarSight signal, you need a TV or VCR that has a built-in decoder or a standalone StarSight box that connects to your TV and VCR. In either case you'll get a universal remote control with StarSight keys. You must also pay a monthly subscription fee to StarSight (or your cable-TV company) that averages about \$4 a month, depending on the package you choose — the longer the subscription period, the lower the rate. And depending on whether you order the service directly from StarSight or from a cable-TV company, there may also be a one-time activation fee (StarSight charges \$15).

Before you can receive the StarSight signal, however, you have to activate your StarSight-equipped component — a simple procedure that involves calling an 800 number and providing basic information, like whether you have a satellite, cable, or broadcast TV setup. At that time you can also specify the order in which you want the channels to appear in your on-screen grid, putting your favorite channels on top, for example. Once

the activation process is complete, StarSight data is transmitted to your TV through an unused portion of a broadcast TV signal known as the vertical blanking interval, or VBI — the same conduit used to transmit closed captions for the hearing impaired. (It takes several hours to download the initial batch of data, which is stored in a memory chip and updated daily.) StarSight uses the VBI's of more than 200 local PBS stations to cover most of the country. To reach the small percentage of viewers not served by those PBS stations, and for backup, StarSight also uses the VBI's of the MTV and Nickelodeon channels.

STARSIGHT						
SEP	MON	TUE	WED	THU	FRI	SAT SUN
7	9:00P		9:30P			10:00P
CNN	Larry King Live!					World News
SHOW	City Slickers					The Search
HBO	Bingo		Home Alone			
DISC	All In a Day's Work					All In a Da
26	Math ... Who Needs It?!					Rassias In
ESPN	Major League Baseball					
FAM	Batman					700 Club W
4	In the Best Interest of					News
DISN	Casablanca					Gaslight
REQ	Juice					
HBO	HOME BOX	CBL	8	7:25P	MCN	SEP 7

StarSight's on-screen program grid is interactive and offers viewers quick access to seven days' worth of schedule information.

"This Is The Best \$199 You Can Spend On Yourself."

PC magazine

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Henry Kloss

SoundWorks consists of two satellite speakers (app. 3 1/2" x 5 1/2" x 3 1/2") and a compact, subwoofer cabinet that encloses a 4" woofer, a 3-channel amplifier, equalization and crossover electronics, as well as a control panel.

The Satellites.

The small satellites are magnetically shielded so they can be used very close to a TV or computer monitor. They contain a remarkable 2" speaker driver with a long-throw/wide-range design that reproduces

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"...head and shoulders above the others..."
MacUser magazine

The Subwoofer.

The subwoofer cabinet (a little bigger than a shoe box: 5" x 8" x 9") reproduces only non-directional bass so it can be placed in out-of-the-way places – behind your TV set, under your desk, or in back of furniture. It contains a 3-channel amplifier that's been precisely tailored to match the speaker drivers. Its control panel includes a stereo mini-jack input for connecting to a computer or a



\$199⁹⁹

Amplified Subwoofer/satellite speaker system

portable CD player, a "set and forget" bass level control, and connecting terminals for the satellite speaker wires. It also has an input for a 12 volts – so you can plug *SoundWorks* into the cigarette lighter in your car or boat!

The Sound.

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CIRCLE NO. 6 ON READER SERVICE CARD

A number of StarSight-equipped TV sets are available from Zenith and Mitsubishi, and Magnavox is offering a set-top box for \$150 that's compatible with any brand of TV, VCR, or cable box (as long as it can be controlled by a wireless remote). Samsung and GoldStar recently introduced the first StarSight-equipped VCR's, both priced at \$550, and VCR's bearing the StarSight logo are due this summer and fall from Sony and Zenith. Virtually all of the other major TV and VCR manufacturers — including Panasonic, RCA, Sharp, Magnavox, Toshiba, and Daewoo (a major private-label maker) — have also signed license agreements with StarSight, so expect to find a growing selection of StarSight TV's and VCR's in the coming months. StarSight circuitry is available in cable converters from GI/Jerrold, Zenith, and Scientific Atlanta and in Uniden satellite receivers.

Paging VideoGuide

In preparation for a national rollout this fall, VideoGuide of Bedford, Massachusetts, is scheduled to introduce an on-screen program-guide service in July to TV viewers in the northeastern U.S., from New England to Richmond, Virginia, and as far west as Harrisburg, Pennsylvania. Like StarSight, VideoGuide is a subscription service that provides a seven-day on-screen guide complete with program summaries, category-search capability, and one-button VCR recording. Unlike StarSight, though, the VideoGuide data is transmitted via BellSouth's national paging network to a set-top box with a small antenna. The service also provides real-time news, weather, and sports information. (StarSight says it has plans for a similar service.)

If pre-launch demonstrations are any indication, the VideoGuide graphics appear to be more distinctive, detailed, and colorful than what's currently available from StarSight. On the other hand, StarSight is a proven system that has been up and running successfully throughout the country for almost a year now.

The VideoGuide receiver, which comes with a universal remote control, sells for \$100, and the basic subscription price is \$4.99 a month (or less if purchased on an annual basis). The news and sports services add an additional \$2.99 to the monthly charge if one is ordered, or \$4.98 if both are ordered. The compa-

ny has no current plans to license its system for use in TV's and VCR's.

XDS for Free

If you like the idea of receiving information on your TV screen, but you don't want to add to your monthly bills, keep an eye on XDS, a free information service that some broadcasters are now offering. Short for extended data services, XDS is a data-transmission standard established by the Electronic Industries Association (EIA) for delivering basic information to specially equipped TV sets and VCR's. Possibilities include the program name, total time and time remaining in the program, a rundown of captioning and audio services, and the network name and station call letters. To display XDS information on screen you press a button on the remote of an XDS-equipped TV or VCR.

Information is transmitted over the VBI, but since the XDS system has no information-storage capability and uses only one of the forty-some lines available in the VBI (StarSight uses several lines), it is only able to provide simple text without graphics. While TV manufacturers are required by law to equip TV sets with screen sizes of 13 inches or larger with closed-captioning circuitry, they are not obligated to include an XDS decoder.

Ultimately, the success of XDS will depend on how many broadcasters decide to offer the free service. Last year, PBS stations across the country gave Americans their first taste of XDS by transmitting data that automatically set an XDS-equipped VCR's clock. Sony supported the launch with two models, and XDS-capable VCR's are also now available from Panasonic. On the TV side, Mitsubishi and Sony sell XDS-equipped sets.

Sony recently introduced three VCR's featuring expanded XDS capabilities. In addition to putting the notorious flashing "12:00" to rest, these models can also display station ID's (now being transmitted by many PBS stations) and program names (from PBS later this year).

In February, six stations owned by the ABC network began the first phase of a planned XDS rollout to be completed later this year. The XDS transmissions include the names of the network and program.

Taping with Index Plus

Gemstar Development of Pasadena, California, greatly simplified the task

of VCR recording with its popular VCR Plus system. Now, the company aims to enhance TV viewing and videotape playback with its unique Index Plus system, which is undergoing testing in preparation for a national launch later this year. Using encrypted program information received over broadcast VBI lines, VCR's equipped with the proprietary Index Plus chip provide an on-screen directory of the shows recorded on a particular videocassette. Highlight the program you want to view, and the VCR automatically fast-forwards or rewinds the tape to find it. Index Plus VCR's are designed to keep track of up to 400 programs they have recorded, and they can display a list on the TV screen that tells you which shows are on which tapes (the tapes are coded).

IndexPlus also delivers basic information to your TV set during viewing. The program name and channel number appear on screen when you press a button on the remote, and you can call up a program guide that provides a listing of the shows scheduled for the rest of the day on a specific channel. And, like StarSight and VideoGuide, Index Plus offers one-button recording capability.

The first VCR incorporating Index Plus is slated to reach consumers this summer as an \$899 Panasonic unit. JVC will introduce a \$599 model this fall, and Sharp also plans to offer an Index Plus VCR later this year. Other companies expected to support Index Plus include RCA, Hitachi, Sanyo/Fisher, and Mitsubishi.

Gemstar says it is currently leasing VBI lines from enough stations and cable networks to cover more than 90 percent of the country. The company is also finalizing agreements with broadcast and cable networks to support Index Plus. Cooperating broadcasters can provide more detailed information about their programming lineup, including last-minute changes in their schedules.

On-Screen Addiction

All of the new on-screen program-guide services and products promise to enhance and simplify the home viewing experience. But watch out — info surfing, just like channel surfing, can become addictive. Like other new products and features you never knew you needed, once you start using an electronic program guide, you'll wonder how you ever lived without it. □

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be the best value in the world." It doesn't have quite the deep bass extension as the original *Ensemble*, and it won't play as loudly. But in terms of performance for the dollar, we believe it has no serious rival.

The Classic *Ensemble* Sound.

We believe the single most important factor in designing a musically accurate speaker is tonal balance. A properly designed speaker should not put any extra emphasis on one octave versus another. Henry Kloss spends an extraordinary amount of time "voicing" his speaker designs for precise, octave-to-octave tonal balance. The result is that *Ensemble IV* has an overall sound very similar to the more expensive members of the *Ensemble* family. What it sacrifices is the lowest half-octave of deep bass, and power handling capability.



Ensemble IV Home Theater is identical to the basic *Ensemble IV* system except that it has five satellite speakers instead of two. It's perfect for use in surround sound systems with Dolby Pro Logic®. Price \$379⁹⁹

Great Sound, Anywhere.

Ensemble IV's satellite speakers are small enough to fit in the palm of your hand (4" x 4" x 3 5/8"). And its subwoofer is about the



\$229⁹⁹

The *Ensemble IV* Subwoofer/Satellite Speaker system

size of a shoebox (6 1/2" x 8" x 12"). Since the subwoofer can be put in out-of-the-way places—behind drapes, under furniture—*Ensemble IV* can fit into any room, no matter how small. It's perfect for use in apartments, dorms, offices, dens, kitchens and bathrooms.

The Satellites.

Each *Ensemble IV* satellite incorporates a unique wide-range, long-throw three inch driver capable of reproducing notes down to 150 Hz, without the use of a second driver. Magnetically shielded, they won't distort your TV or computer screen. Each satellite is finished with a scratch-resistant, textured charcoal surface, and comes with a premium metal grille instead of the inexpensive fabric used by many other speakers in *Ensemble IV*'s price range. Because of their size, they'll fit just about anywhere. Wall-mounting hardware is included.

The Subwoofer.

The lowest bass notes are reproduced by *Ensemble IV*'s shoe box-sized subwoofer. It uses a remarkable 5 3/4" bass driver with dual voice coils. The driver is mounted in a true acoustic suspension cabinet. It fires into a second "tuned bandpass" cavity within the cabinet which filters out unwanted higher frequencies. The careful engineering of this design allows *Ensemble IV* to combine deep bass response with high efficiency. Henry

Kloss says, "*Ensemble IV* is the smallest and most affordable system I can design for use with any amplifier or receiver and still provide deep, really satisfying bass." Since low frequency bass is non-directional, the subwoofer can be hidden behind or under furniture.

Factory-Direct Savings.

Cambridge SoundWorks products are available only direct from us, or through cost-efficient Best Buy stores nationwide.

Because of our efficient distribution, you get unbeatable quality and performance for your dollar. After you hear *Ensemble IV*, we think you'll agree that it sounds as good or better than speakers selling for hundreds more. It comes complete with 100' of speaker

wire, a wire stripper/cutter, a Hook-Up Guide and our Guide To Surround Sound.



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CIRCLE NO. 6 ON READER SERVICE CARD



AUDIO Q & A

BY IAN G. MASTERS

Cool It

Q I have five monoblock power amplifiers stacked on top of each other in one side of my home theater cabinet. How can I dissipate the heat they produce, which seems to be mostly at the top of the cabinet? I want to put three or four small fans at the top of the cabinet to blow the heat out the back, but I can't find any that are quiet enough.

TYRONE THOMPSON
Baltimore, MD

A I imagine you would have to move a lot of air to keep that array cool in a confined area. And powerful fans do tend to be noisy. One solution might be simply to move the amplifiers; they don't have to be right there in the cabinet with the controls but could be moved to a location where air moves freely around them, or where noisy fans can't be heard from the listening room. If that's not practical — or if you simply like having all that amplifying muscle visible — try mounting the fans in a sound-proofed enclosure, or moving them away from the stack to a place where they can't be heard, and connect them to the cabinet with the kind of flexible ducts used for clothes dryers.

Drilling for Oxidation

Q A year ago, I drilled two 1/8-inch holes in a compact disc so that I could observe the oxidation of the aluminum layer. So far nothing has happened, and the metal is as brilliant as ever. Does that mean the CD will last longer than the twenty or twenty-five years some people have said it will?

STEPHEN COTTRELL
Salt Lake City, UT

A Nobody really knows how long CD's will last, as they've only been around for a bit more than a decade. A disc should last indefinitely as long as air doesn't get to the aluminum layer and begin the oxidation process, which will eventually destroy its reflectiveness. As for your rather dramatic experiment (you must have really hated that CD!), I can only guess that the heat of your drill melted the plastic in the disc and resealed the aluminum when you stopped. If so, it might never deteriorate. I'd be interested to know if you can still play it!

Hot Center Channel

Q I'm not happy with the sound of my center-channel speaker. I understand that soundtracks balanced for theater presentation are often brighter than one would like for home playback, but they sound terrible

on my system. I don't want to replace what I've bought; would there be any advantage to replacing the tweeter, say, or finding some kind of device that could "block" some of the signal?

RENE J. GONZALES
Tampa, FL

A It's almost never advisable to tinker with a speaker's innards; designers go to great lengths to balance the elements of their products to produce even response and dispersion, and any changes you make are likely to degrade sound quality rather than improve it. You're better off using an equalizer to tone down overly bright movie soundtracks (that's essentially how Home THX processors address this problem). But sometimes a judicious tweak of your amplifier's treble control is all it takes to bring the highs in line.

Sub Directions

Q An audio dealer told me that a subwoofer with a downward-firing driver is more flexible and easier to place than one with a forward-firing driver. He said that with a front-firing model, I'd have to make sure that nothing blocked the path between the woofer and the listening position, but that a subwoofer with a downward-firing driver could be hidden behind the sofa or TV set. Is all that true?

HILARIO L. MANABAT
Toronto, Ontario

A It shouldn't matter which way the driver fires, since the frequencies handled by a subwoofer are essentially omnidirectional (or at least they *should* be). But if the subwoofer's response extends to too high a frequency, you might be able to localize the higher-frequency sounds coming from it. In that case, a subwoofer with a downward-firing driver might be better, since the directional sounds would be aimed away from the listener, and perhaps be absorbed by carpeting on the floor. If a forward-firing subwoofer is crossed over so high that you can pinpoint its position without looking, it's probably not a bad idea to place something in front of it to block the higher frequencies — or simply turn it around to face the other way.

Speaker Extension Cords?

Q A friend told me that it is possible to connect speakers to my amplifier using conventional extension cords. That would be an economical way to wire my system, given the low cost of extension cords. Would it work?

SCOTT MORTIMER
Amherst, NH

A There's no real electrical reason you couldn't use extension cords to connect your amplifier to your speakers, provided the runs are not extremely long. Or you could make things even cheaper by using plain zip cord of appropriate thickness.

At one time I had the same idea, when I moved my equipment around a lot and wanted a way to connect and disconnect the speakers quickly (I wired electrical receptacles to my amplifier's outputs so that I could simply plug the speakers in). The extension cords seemed ideal, and the polarized sort with different-sized prongs even kept speaker phase straight. It worked very well . . . until somebody helping me set up plugged one of the speakers into a wall outlet. After that, I decided to play it safe and use a different sort of connector.

Power Boost

Q I'm interested in doubling the power output of my 65-watt-per-channel receiver because I often play music in three rooms at once. Can I add a power amplifier to my system and use the receiver I already have for preamp and tuner functions, or should I simply buy a more powerful receiver?

JOE THOMAS
Brooklyn, NY

A Unless you want a new receiver, perhaps to get features not found on your current unit, I would opt for extra amplifiers. Running multiple speakers from a single amplifier is very hard on its output stage and may result in distortion, even if the amplifier doesn't shut down. Additional amplifiers may also give you some individual control over the levels in each of the three locations, which may matter if the speakers have dissimilar sensitivities.

Hooking things up would be quite simple, and your receiver's amplifier section could still be used for one room. If the receiver has pre-out/main-in jacks, remove the jumpers that connect them together and replace them with Y-connectors, routing the pre-out signal both to the receiver's main-in and to a high-level input on the external amplifier. If the receiver doesn't have such jacks, you can use the record-out jacks or pad down the speaker-level signal and feed it to the extra amplifier.

LCD Projectors

Q I'm interested in buying an LCD projection TV system. I've compared the picture of a couple of models using both laser-disc and VHS tape, and while the picture was not as good with tape, it was accept-

The Critics Love Ensemble Speakers. You'll Love Our Factory-Direct Prices.

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

Stereo Review

Audio magazine once said our Ensemble® speaker system may be "the best value in the world." And *Stereo Review* said, "It's hard to imagine going wrong with Ensemble." Dozens of critics and thousands of customers have applauded our Ensemble, Ensemble II and Ensemble III speaker systems. Designed by Henry Kloss (founder of AR, KLH and Advent), they became best sellers by offering quality construction and accurate, wide-range music reproduction — at Factory-Direct prices.

Ensemble

Our current Ensemble is an improved version of our original dual-subwoofer/satellite speaker system. It maintains the dual subwoofer design, which allows for maximum room placement flexibility. Placement of bass and high-frequency speakers in a room (and how those speakers interact with the room) has more influence on the sound quality of a music system than just about anything. Ensemble's ultra-slim subwoofers give

ed Ensemble by saying "you get 30 days to return the speakers or keep them, but you'll keep them."

New Woofer And Tonal Balance Controls.

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

1. Ensemble now uses a new 8" woofer with a very long "throw" for more linear cone excursion and more accurate bass. An integral heat sink provides improved power handling.
2. Ensemble's satellite speakers use the same speaker drivers and crossover as the original, but with new midrange and high frequency controls.

The midrange control lets you choose the same output in the key 800-1600 Hz octave as in the original, or you can emphasize it by 2 dB. Ensemble satellites

have relatively less output in this range to avoid the "boxy" sound of many speakers. This results in an "open" sound on large-scale symphonic works.

For small-scaled music, the higher output position proves a "warmer" sound.

A three-position high frequency control can subtly increase the system's "airiness," or reduce any tendency towards "edginess."

We believe our Ensemble system competes head-on with speakers selling for hundreds more. Available with black-laminate subwoofers for \$629⁹⁹, or with vinyl-clad subwoofers for \$549⁹⁹.

Ensemble II

Ensemble II is an improved version of our best-selling system. It's more affordable than Ensemble because it uses one cabinet for both subwoofer speakers. Ensemble II maintains the tonal balance, frequency range, power handling and construction quality of the original. But its satellite speakers use the same new tonal balance controls as Ensemble's.

Ensemble II also has a new flared subwoofer port. The subwoofer cabinet encloses two 6 1/2" long throw woofers mounted in a sealed "acoustic suspension" chamber. They project into a second chamber fitted with the flared port, which provides smoother air flow, eliminating extraneous noise on strong bass notes.

We think Ensemble II outperforms other speakers in its category, including well-known models for about twice the price. \$439⁹⁹.

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Ensemble III

Ensemble III is our most compact, most affordable subwoofer/satellite speaker system. Its satellite speakers are only 4 1/2" x 6 1/2" x 3" and its subwoofer is 8" x 8" x 15".

Compared to Ensemble II, Ensemble III gives up a little in power handling, low bass range, and efficiency.

Unlike the "cube" satellite speakers you'll find in most similarly priced systems, Ensemble III's satellites are two-way speakers. Ensemble III's 6 1/2" woofer uses two voice coils in a cabinet with a flared port for smooth air flow.

With most recordings

Ensemble III will sound virtually identical to Ensemble II. It simply won't play as loud. Its construction quality is normally found only in much more expensive speakers. Price, including connecting wire, cutter/stripper, Hook-Up Guide and Dolby Surround Guide, is only \$329⁹⁹.

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you more placement flexibility than any system we know of, and are most likely to provide the performance you want in the real world...in your room. Having two, compact subwoofers lets you move them around, experiment, and find that placement that gives you exactly the sound you want. This is one of the reasons *Esquire* describ-

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SOUNDWORKS
BY HENRY KLOSS

Includes
Guide To
Surround
Sound

FREE Audio Catalog

At Cambridge SoundWorks we make speakers and music systems designed by Henry Kloss (founder of AR, KLH & Advent). We sell them—and components from companies like Sony, Pioneer, Philips, Carver and others—factory-direct, with no expensive middlemen. For example, a Dolby Pro Logic Surround Sound system with Model Six speakers, rear speakers, a Sony Pro Logic receiver and remote is only \$747. Call today and find out why *Audio* magazine said we may have “the best value in the world.”

- Call toll-free for factory-direct savings.
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- Audio experts will answer your questions before and after you buy, 8AM-Midnight (ET), 365 days a year—even holidays.
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able. The projector I want to buy, though, is a cheaper model. I've only watched it with a laserdisc source, and the picture was fine. Is it likely that given the lower resolution of VHS and cable, the inexpensive projector will produce significantly lower picture quality with these sources than the more expensive models?

HOWARD WILMOT
Ladson, SC

A The relationship between one video medium and another, as far as picture quality is concerned, tends to be pretty stable from one display system to another. So if the best source — laserdisc, say, or digital satellite — is marginal, the lower resolution of a VHS tape might well render the picture uncomfortably grainy. But if the picture from the high-quality source looks okay, the others should be fine too.

The main criticism of early LCD systems was that the individual pixels of the image were clearly visible, and many people found that distracting. Things are getting better on that score, although LCD's are not yet up to the clarity of conventional projection systems. But if the pixels don't bother you and you want the convenience of trouble-free setup, the inexpensive LCD model might be just the ticket.

Getting Extra Inputs

Q *I have used up all the inputs on my receiver, and I still want to add a MiniDisc or DCC recorder. I was wondering if I could add a separate preamplifier and route it through the CD input to get more inputs. Or should I just buy a new receiver with more inputs?*

BRIAN GAMACHE
Burlington, VT

A If you already have a second preamp that's sitting idle, you can certainly do what you propose. The high-level input on your receiver could be fed from the record-out jacks of the preamplifier, in which case only the preamp's input selector would be active, or you could take the signal from the preamp's main output. In that case, you would be able to control level and tone for those inputs independently of those fed directly to the receiver (of course, that would be on top of any adjustments made on the receiver).

But if you don't already have the second component, buying one for that purpose is overkill. Pick up a simple input switcher from an audio store or an electronic-parts outlet like Radio Shack. Or buy a double-pole rotary switch and an accessory chassis box for mere pennies and make your own switcher.

Killing Sports Commentary

Q *I want to eliminate (or at least minimize) the voices of announcers on sports broadcasts but retain most of the crowd and background sounds. I've tried various wiring schemes, but nothing seems to work. Is any equipment available that can get rid of the commentary?*

JOSEPH P. CHERENKO
Valencia, PA

A Growing weary of the color commentary? There's only one way I know of getting rid of it, but it often works amazingly well. Feed the signal to a Dolby Pro Logic decoder or receiver and disable the center channel. Almost all of the nattering is in that channel, so it will disappear: the crowd sounds will not only be undisturbed but will usually come out in very convincing surround, even if they're not specifically Dolby-encoded. At least some sports events are Dolby-encoded, however, and some may actually have stereo commentary that you won't be able to eliminate. Sorry.

Maximum Loudness

Q *I have speakers with 15-inch woofers that are rated at 220 watts, and I am driving them with a 100-watt amplifier. How loud can I go with this arrangement? Could I damage my system by turning the level up too high?*

SHANE PETERSON
Sebring, OH

A First, the rating of your speakers, if it means anything at all — and most such power specs are pretty vague — refers to how much power they can take before blowing up, not to how loud they can play. Assuming they are reasonably sensitive — 88 dB or better, say — you can probably play the system as loud as you want without problems. You're unlikely to damage anything unless you drive the amp into clipping for extended periods. That doesn't sound like much of a risk in your case.

Quad Revisited

Q *My audio system includes an old four-channel receiver and a four-channel open-reel tape deck. The best sound I get comes from four-channel tapes, and I have more than thirty of them. The problem is that my receiver is developing quirks that even its manufacturer cannot fix. Is there any way I can continue to play my tapes if I have to replace my receiver?*

DON H. ALLGAIER
Yakima, WA

A It's true that nobody makes old-style quadraphonic receivers any more, although you might still be able to find one secondhand by advertising in your local paper or one of the stereo magazines. Failing that, there are plenty of multichannel A/V receivers and amplifiers on the market. Your biggest problem is that these products are typically not designed to accept four discrete input channels. If your tape deck has its own volume control, you could get around the problem (somewhat awkwardly) by choosing electronics that enable you to patch in between the preamp and power-amp stages. You would also need a switch-box or two, but it would work. Otherwise, you're looking at a bit of a project.

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.

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



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



Because we sell carefully matched and tested home theater speaker systems Factory-Direct, and through cost-efficient Best Buy stores, you can save hundreds of dollars. We believe the products on these pages represent the country's best values in high performance home theater components. Audio critics, and thousands of satisfied customers, agree. *Stereo Review* said, "Cambridge SoundWorks manufactures loudspeakers that provide exceptional sound quality at affordable prices." *Audio* suggested that we may have "the best value in the world."

Center Channel Speakers

Cambridge SoundWorks manufactures three speakers for use as center channel speakers in Dolby Pro Logic home theater systems. All three are magnetically shielded so they can be placed near a TV or computer monitor. *Model Ten-A* is a small, affordable two-way speaker. **\$79⁹⁹**. *Center Channel* is essentially identical



to a Cambridge SoundWorks *Ensemble* satellite (but with magnetic shielding). **\$149⁹⁹**. *Center Channel Plus* uses an ultra-low, ultra-wide design that is ideal for placement above (or, with optional support stand, below) a TV monitor. **\$219⁹⁹**.

Surround Speakers

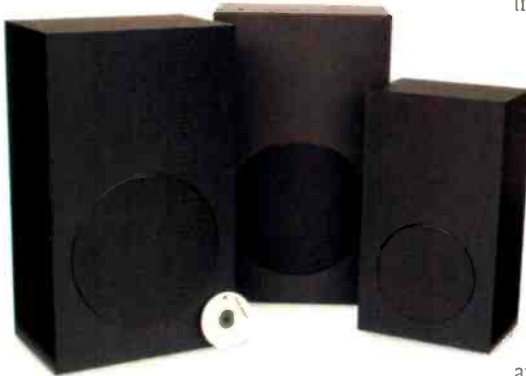
Cambridge SoundWorks makes two "dipole radiator" surround sound speakers. Dolby Laboratories recommends dipole radiator speakers for use as surround speakers. *The*

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

"In many ways the surround sensation was every bit as good as far more expensive installations." **\$399⁹⁹ pr.** The smaller *The Surround II* is arguably the country's best value in a dipole radiator speaker. **\$249⁹⁹ pr.**

Powered Subwoofers

The original *Powered Subwoofer* by Cambridge SoundWorks consists of a heavy-duty 12" woofer housed in an acoustic suspension cabinet with a 140-watt amplifier and a



built-in electronic crossover. *Stereo Review* said it provides "deep powerful bass...31.5 Hz bass output was obtainable at a room-shaking level...they open the way to having a 'killer' system for an affordable price." **\$699⁹⁹**.

Our *Slave Subwoofer* uses the same woofer driver and cabinet, but does not include the amplifier or crossover. It can only be used in conjunction with the *Powered Subwoofer*. **\$299⁹⁹**. The new *Powered Subwoofer II* uses a 120-watt amplifier with an 8" woofer. **\$399⁹⁹**.

Home Theater Speaker Systems

We have assembled a number of home theater speaker systems that consist of center

channel, surround and main stereo speakers. The combination we show here is our best seller. It includes our critically acclaimed *Ensemble* subwoofer satellite speaker system (with dual subwoofers), our *Center Channel Plus* and a pair of our best surround speakers, *The Surround*. You could spend hundreds more than its **\$1,167⁹⁹** price without improving performance.



For information on other home theater speaker systems - or on any of the products we

make and sell - call 1-800-FOR-HIFI for your free color catalog. Thanks.

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CIRCLE NO. 6 ON READER SERVICE CARD



TECHNICAL TALK

BY JULIAN HIRSCH

Audio Thrills and Chills

High-fidelity music in the home, over the past forty-odd years, has developed from the little-known hobby of a few enthusiasts into a sizable industry. Today a "hi-fi" (I still have a hard time accepting that term as a noun) is as much a part of the American home as a TV or refrigerator.

Personally, I view a high-fidelity music system not as an appliance, but as a gateway into a world of music, heard in one's home with a quality ("fidelity") of sound that distinguishes it from an ordinary phonograph or radio. There is much more to it than numerical performance specifications or "bells and whistles," and a whole generation (or more) seems to have missed some of the unique qualities — the "magic," if you will — of high-fidelity sound.

I was reminded of this by a letter from a reader referring to a STEREO REVIEW test report on a somewhat unusual loud-speaker whose sound quality was well beyond what I would have expected from a speaker of its size. He had built a speaker of the same basic design some ten years ago, and his reaction to its performance was similar to mine — a sense of awe.

That element of surprise is rare nowadays. I can recall a number of occasions in the past when an unexpected listening experience made me stop and marvel at what was happening. One of the earliest was hearing (and feeling!) the tremendous floor-shaking bass of a Klipschorn in the 25- to 30-Hz region. That was at a time when "bass" meant 50 Hz or so, not exactly distortion-free and usually more audible than tactile. I recall a few years later the sight of a 50-pound Acoustic Research AR-1, driven by a skin-tingling but barely audible 20-Hz tone, sliding slowly and almost silently across a gym floor under its own power. That was *real* bass!

Early audiophiles, like today's, enjoyed playing music (and other material) to demonstrate the potential of their music systems. A number of "demo" discs were created for that purpose, including some outstanding ones by Emory Cook. Hearing his LP recording of the liner *Queen Mary* sounding its whistle (horn?), played

through a giant Bozak speaker system, was next best to standing on the pier. No one who heard it forgot the experience.

In those days (the 1950's), high-fidelity audio was new and wonderful. The term "hi-fi," now so commonplace as to have become almost meaningless, was not yet a recognized part of the English language, although general usage later earned it space in dictionaries. The audio components of that day — often linear descendants of public-address amplifiers and speakers — were for the most part undistinguished, although there were a number of exceptions.

When stereo arrived, things changed rapidly, and not always for the better. The demonstration software of the time was distinctly unsubtle, leading to the moniker "Ping-Pong stereo." To catch the ear of an uninitiated public, the definition of the stereo stage was often reduced to binary form, full left and full right. We have come a long way since those times.

There is much more to a high-fidelity music system than numerical performance specs or "bells and whistles."

An unforgettable experience from the 1970's was hearing a demonstration of the JVC Q-Biphonic system. That was in the quadraphonic period, when JVC was very active in devising ways to expand the spatial imaging qualities of two-channel stereo.

Imagine sitting in the only chair in the center of a large room with four speakers placed near its corners. You hear the door in front of the room open and the footsteps of someone walking toward you (even though you can see that the door has remained closed and that no one else is in the room). Eventually the footsteps reach your position, and you sense that someone is standing beside your chair. Then a seductive female voice whispers in your ear. When you turn your head, no one is there, and the illusion is shattered.

In past times, such an experience would be described as magic, or possibly witchcraft. To me, it was part of the magic of audio, even though Q-Biphonic never found its way into any commercial products, presumably because of its requirements for special recordings, a specific room/speaker configuration, and a critical listening location.

On a more practical level, however, today's best stereo recordings are far more sophisticated in their overall balance and sonic quality than those of the early days, considerably assisted by the advent of digital recording and the compact disc. By and large, they are immeasurably superior in quality to anything that could have been imagined forty-odd years ago (except for live music, which must remain the standard by which any recording is judged). Occasionally I hear music reproduced with (almost) convincing reality. Under the right conditions, you can close your eyes and believe you are in the concert hall.

Many of us take today's recorded music for granted. It has been with us, evolving steadily, for some decades (actually more than a century, if you go back to its beginnings with Berliner and Edison), and I imagine that few people other than audio hobbyists give more than a passing thought to the almost miraculous technical achievement that it represents. I am thankful that I can still feel a special thrill when I listen to a superbly recorded CD through a pair of today's best speakers. I am sorry for those who have not enjoyed a similar experience.

The same could be said of radio communication and broadcasting, which developed contemporaneously with sound recording. The advances in radio over the century or more since Hertz and Marconi are of a similar magnitude.

As a teenager, I became a licensed amateur radio operator, and to this day I am still active on the air. I have never forgotten the thrill of my early radio contacts, which were in some ways even more magical than the world of hi-fi.

Just as I still experience, after all these years, a special thrill from personal radio communication with other "ham" operators around the country and the world, I occasionally still find a particular audio component or recording whose special sound quality sets it apart from the rest. Call it "magic" if you will, but I hope it never goes away. □

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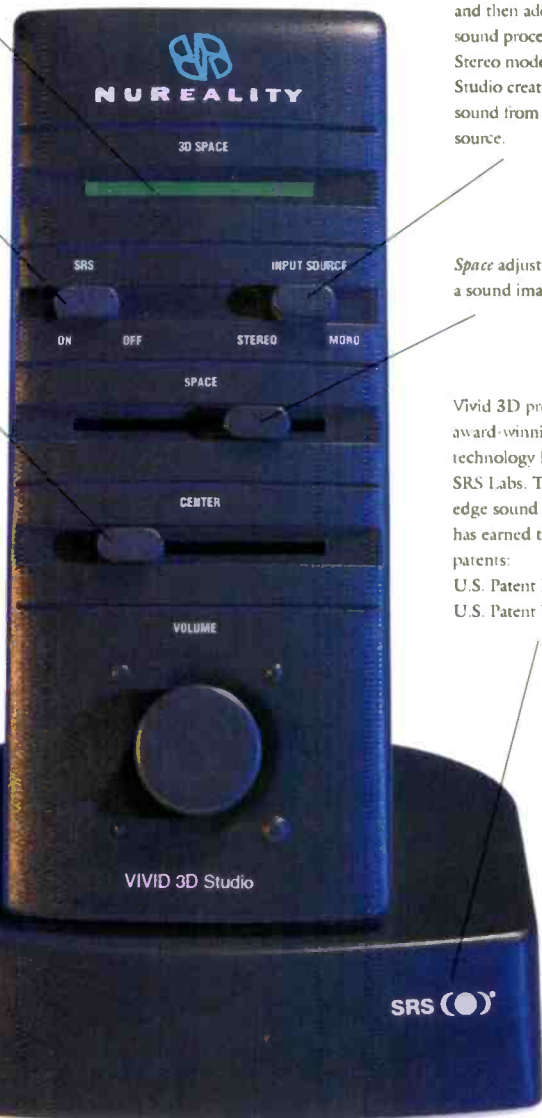
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** Quote excerpted from a review of the **SRS (●)** technology from the April 1992 issue of *Audio Magazine*. The Vivid 3D sound enhancement system won the Retail Vision "Best Product" award in May 1994, and the Innovations award from the International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

TEST REPORTS

KOOK P. LEUNG



Marantz AV600 A/V Tuner/Preamplifier

DAVID RANADA • TECHNICAL EDITOR

The AV600 A/V tuner/preamplifier is Marantz's second Home THX component, following the compact and versatile MA500 single-channel power amp. Besides full Home THX enhancement of Dolby Pro Logic processing, an AM/FM tuner, and considerable A/V switching capability, the AV600 has a few features that set it apart in usability and convenience from other Home THX controllers we have tested.

The AV600's most unusual feature is its provision of two subwoofer outputs, selectable via a rear-panel switch to operate in monaural (parallel) or stereo. Although the actual usefulness of stereo subwoofers — particularly those operating only below 80 Hz, as they do in Home THX systems — is still controversial, the AV600 at least will let you decide for yourself. Separate low-pass filtering is provided for each subwoofer output, and 80-Hz high-pass filtering is switched into all channels when the subwoofer outputs are turned on.

Also unusual is the front-panel input-level control, which operates in

conjunction with a set of flashing indicator lights. This knob, located along with quite a few other controls behind a front-panel fold-down door, is best considered an input-overload prevention knob. You adjust it so that a red peak-indicator light "only flashes briefly during the very loudest passages." This adjustment helps insure that the peak outputs of your signal source are not overloading the Dolby Pro Logic decoder chip. There has been a de facto standard output level from home CD and laserdisc players

for quite some time, however, so when you're playing the digital soundtracks of a laserdisc or using a home CD player you should not have to turn the input-level control more than a couple of "dots" away from its center detent to get the indicators to light up properly. If you do, there is something amiss with the player's output level or its connection to the AV600.

Marantz hasn't forgotten the "standard" A/V tuner/preamp features either. For example, you can separately select audio and video sources to get the FM-tuner audio to go along with broadcast video for that rare stereo simulcast. You can also select the source to be recorded on any attached audio or video deck independently of what is being heard or watched. The tuner comes with more preset memories than you'll probably ever need: thirty, distributable in any fashion over the AM and FM bands.

Besides Home THX processing, several other surround-sound modes are provided. These include straight Dolby Pro Logic, Movie (which allows a very long surround-channel delay time), and Hall and Matrix (for music enhancement). A mono mode feeds everything through the center speaker. The processing mode is selected with a front-panel button that's duplicated on the remote control.

DIMENSIONS

16 $\frac{3}{4}$ INCHES WIDE, 4 $\frac{3}{8}$ INCHES HIGH,
14 $\frac{3}{8}$ INCHES DEEP

WEIGHT

12 POUNDS

PRICE

\$1,200

MANUFACTURER

MARANTZ AMERICA, INC., DEPT. SR,
440 MEDINAH RD., ROSELLE, IL 60172-2330

TEST REPORTS

Convenience features include bass and treble controls and a front-panel quarter-inch headphone jack. The front panel also has buttons for activating the useful on-screen display, for turning off the even more useful front-panel fluorescent display, and for setting the preamp's sleep timer, which will also turn off whatever's plugged into the two switched rear-panel AC outlets. The AV600's mute control is available on both the front panel and the remote, which is vastly more convenient than just on the remote. The handset itself has lots of non-AV600 buttons suitable for programming with the commands used by other infrared handsets. It also has a full complement of speaker-balancing controls, including a test signal that, for once, is manually switched between speakers — and switches without interruption or muting. You're also free to alter the speaker balances, including the levels of any subwoofers, separately for the soundtrack modes (THX, Dolby Pro



Logic, Movie) and the others (Hall, Matrix, Monaural). The only typical feature lacking in the AV600 is a phono-preamp section, which you probably won't miss.

Connections and switching are provided for eight external sources, three audio only (CD, tape, DCC) and five audio/video with both composite- and S-video connectors (TV, laserdisc, two VCR's, and aux). The auxiliary input is located behind the front-panel door.

Several outputs are available. First, there's the video-monitor output, either composite or S-video. Next there's a line output that feeds out a duplicate of the selected input. Then there are the main preamp outputs, eight phono jacks: a pair each for left and right front, center (in parallel), left and right surround, and left and right subwoofer. A 25-pin D-connector is available for feeding these outputs to a similarly equipped multichannel Home THX power amplifier via a single multiconductor cable. Additional rear-panel connections include one for a remote-control relay that hooks up to other Marantz equipment, a screw-on F-connector FM antenna terminal, and thumbscrew connections for an AM antenna. Back-panel switches that must be properly set during initial setup, or possibly if you change speakers, control the subwoofer status (none, mono, or stereo) and the center-channel bandwidth — "none" (corresponding to the Phantom mode in the more

MEASUREMENTS

TUNER SECTION

All data for FM only except frequency response

Sensitivity (50-dB quieting)	
mono	12 dBf
stereo	32 dBf
Signal-to-noise ratio (65 dBf)	
mono	76.5 dB
stereo	72.8 dB
Distortion (THD+N at 65 dBf)	
mono	0.21%
stereo	0.24%
Capture ratio (at 65 dBf)	1 dB
AM rejection	63 dB
Selectivity	
alternate-channel	63 dB
adjacent-channel	13 dB
Pilot-carrier leakage	
19-kHz	-72 dB
38-kHz	-68 dB
Hum	-70 dB
Channel separation	
100 Hz	32.8 dB
1 kHz	44.5 dB
10 kHz	51 dB
Frequency response	
FM	30 Hz to 15 kHz +1.5, -0.6 dB
AM	63 Hz to 4.1 kHz +0, -6 dB

PREAMPLIFIER SECTION

All data for two-channel stereo operation

Output at clipping (1 kHz, 0.3% THD+N)	
volume control at maximum	6.4 volts
Input overload level (1 kHz, 0.3% THD+N)	
CD input	3.9 volts
Input overload margin (re 2-volt input)	
CD input	5.8 dB
Sensitivity (for 0.5-volt output)	
CD input	65.9 mV
Distortion (THD+N at 1 kHz)	
with 0.5-volt input and output	0.011%
Noise (re 0.5-volt output, A-wtd)	
CD input	-93.7 dB
Frequency response (tone controls centered)	
20 Hz to 20 kHz	+0.53, -0.64 dB
Tone-control range	
100 Hz	+11.5, -11.6 dB
10 kHz	+10.5, -10.3 dB

DOLBY PRO LOGIC PERFORMANCE

All data for Dolby Pro Logic mode except where specified for THX Cinema mode	
Frequency response (tone controls centered)	
left, right	20 Hz to 20 kHz +0.47, -0.57 dB
center	20 Hz to 18.3 kHz +0.02, -0.98 dB
surround	36 Hz to 6.6 kHz +0.05, -3 dB

Noise (re output with volume at 0 dB)

left, right	-76.6 dB
center	-76.5 dB
surround	-69.5 dB
Distortion (THD+N at 1 kHz, 1-volt output)	
left, right	0.024%
center	0.022%
surround	0.083%
Surround decoder input-overload margins (at 1 kHz)	
left, right (re 2-volt input)	0 dB
center (re 1.414-volt input)	2.6 dB
surround (re 1.414-volt input)	0.3 dB
Surround-channel noise-reduction calibration error	
re Dolby level (247.5 mV)	-2 dB
re Home THX level (141.4 mV)	0 dB
Channel separation (100 Hz to 7 kHz)	
left output, right driven	>49 dB
left output, center driven	>27 dB
left output, surround driven	>40 dB
center output, left driven	>40 dB
center output, surround driven	>38 dB
surround output, left driven	>38 dB
surround output, center driven	>41 dB
THX re-equalization error	
maximum error	+0.98 dB at 12.5 kHz
THX surround-equalization error (see text)	

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usual Pro Logic nomenclature), "large/THX" (corresponding to Wide, delivering the same bandwidth to all three front speakers), and "small" (corresponding to Normal, splitting low frequencies in the center channel out to the front left and right outputs).

The AV600 performed very well on the test bench, with good to excellent performance in most areas. Among the best figures were the high stereo FM sensitivity, the low noise in stereo operation, and the low distortion in Pro Logic operation. Only a bit less superb were frequency response, which tended to drop off slightly at the extremes of the frequency range, and surround-channel noise level, which was slightly higher than the best we have measured from an analog Pro Logic decoder. Surround-channel frequency-response tracking was very good, with very small, and essentially inaudible, errors over the 40-dB range of the test. Tone-control curves were typical. The front-panel peak-indicator light came on with an input about 2 dB below the standard maximum CD/laserdisc-player output level of 2 volts, which is a sensible threshold level.

The Pro Logic surround-calibration error was zero (within our measurement-error range) for Home THX operation, but it was larger for plain Dolby Pro Logic processing, which uses a different reference level. Although not the main reason for its inclusion, the front-panel input-level control can be used to zero-out errors for either mode if you have the necessary measurement equipment. Then again, Dolby Labs believes that results on this test aren't particularly critical, which is a reasonable judgment, at least for the amount of error encountered here. The Home THX surround-channel "timbre matching" equalization error was not measurable because of the THX decorrelation processing, which was applied to both channels.

In listening tests, the AV600's Home THX surround-decorrelation processing added an average amount of "swimminess" or tunnel-like quality to the surround outputs relative to other Home THX processors we have used. This artifact tends to be noticeable mainly with test tones, however, and not so much on most soundtracks.

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TEST REPORTS

first-order design (6-dB-per-octave slopes), which Duntech credits with a vital role in the system's stereo imaging and overall spatial quality. No inductors are used in its low-frequency section, eliminating one of the potentially nonlinear elements of conventional speaker designs.

We set up the Duntech Ambassador speakers about 7 feet apart, well away from side walls and the wall behind them, and angled slightly inward. The owner's manual supplied with the speakers was considerably more informative than most with respect to the placement of the speakers relative to each other, the room boundaries, and the listeners. Although we were unable to locate the speakers optimally in our room, our measurements confirmed the validity of the manufacturer's installation instructions.

The averaged room response of the left and right speakers, measured using a sweeping tone with a one-third-octave warble, was impressively flat and free from major irregularities. The close-miked woofer response reached its maximum at 100 Hz, falling at 12 dB per octave below 70 Hz and much more gradually above 100 Hz.

The bass response spliced easily to the room response, with an overlap of more than two octaves, yielding a composite frequency response of 63 Hz to 20 kHz ± 2.5 dB. The manufacturer's rated response for the system is 55 Hz to 20 kHz +2, -3 dB, which was essentially confirmed by our measurements, made under completely different conditions.

Quasi-anechoic MLS frequency-response measurements confirmed that the Ambassador speakers should be about 12 feet from the listener for a fully coherent signal to be heard. Our initial measurement, at 1 meter, showed a pronounced "hole" (about 15 dB) at about 5 kHz. A second measurement at 2 meters reduced the hole to about 7 dB at 11 kHz, and a third at 3 meters (about 10 feet) was still smoother, with a ± 5 -dB variation from 300 Hz to 20 kHz. The system's directivity was typical of 1-inch tweeters, with a slight output reduction (less than 5 dB) at 45 degrees off-axis up to 10 kHz, increasing to approximately 12 dB at 20 kHz.

Even from less than the recommended listening distance, the spatial definition of the soundstage was extraordinarily sharp.

The system's rated impedance is 4 ohms. Our measurement showed a minimum of just over 4 ohms at 10 kHz, a maximum of about 17 ohms at 75 Hz, and a typical reading of about 7 ohms over most of the audio range.

System sensitivity was variously rated at 90 or 91 dB in different parts of the data supplied to us by Duntech. Our measurement was 90 dB. At that level (with an input of 2.83 volts) the woofer distortion was very low, measuring between 0.4 and 0.7 percent from 2 kHz down to 80 Hz and rising to 1.5 percent at 55 Hz and 5 percent at 20 Hz (where the output was down considerably).

The Ambassador had no problems handling single-cycle pulses at 1 kHz

and above (our amplifier clipped at 600 to 1,200 watts before the speaker was in trouble), but the small woofers emitted rasping sounds with a 100-Hz input of about 35 watts into their 9-ohm impedance. The system is recommended for use with amplifiers rated at 30 watts or more, and we used amplifiers rated in excess of 100 watts with no problems, even at rather high output levels.

Our listening experience with the Duntech Ambassador speakers was uniformly enjoyable. Even at less than the recommended 12-foot distance, the soundstage they created was extraordinarily sharp in its spatial definition. They have a strikingly uncolored sound, including a top end that managed to be crisp without ever sounding shrill. Probably the biggest surprise was the bass performance, which never sounded in any way deficient or thin. In fact, the only time we were made aware of the speaker's low-frequency limitations was when we switched on a subwoofer while playing one of our favorite deep-bass demo CD's.

But the overall sound of the Duntech Ambassador was so good without the subwoofer that only a confirmed bass addict would find it wanting. In all other respects, it was simply top-notch. This is a speaker easily worth its asking price. □



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JOCK P. LEUNG

Carver A-400x Power Amplifier

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

The Carver A-400x stereo power amplifier carries the THX logo, signifying that it meets Lucasfilm's stringent requirements for use in Home THX audio systems.

The A-400x is otherwise conventionally styled and relatively compact and light for an amplifier rated to deliver, at less than 0.2 percent total harmonic distortion, 200 watts per channel into 8 ohms or 300 watts into 4 ohms (600 watts into 8 ohms in bridged mono operation).

The front panel of the all-black chassis contains only a power switch, a small green LED to indicate that it is on, and the THX logo. Optional handles, matching those for other Carver products, are available. The amplifier's heat sinks are located internally, along the sides; the ventilating holes are on the top, bottom, and sides of the case, close to the fins. Each output stage uses eight power transistors. The interior of the amplifier is sparsely occupied (not unusual for a basic power amplifier), with most of the compo-

nents on a single circuit board and a large power transformer accounting for much of the 25-pound weight of the A-400x.

On the rear apron are two phono-type input jacks, two pairs of speaker outputs (insulated multiway binding posts), and an AC line-fuse holder. A small slide switch near the input jacks converts the amplifier to mono (bridged) operation, for which the speaker is connected to the two red (plus or "hot") binding posts.

DIMENSIONS

17 INCHES WIDE, 4½ INCHES HIGH,
14¼ INCHES DEEP

WEIGHT

25¼ POUNDS

PRICE

\$685

MANUFACTURER

CARVER CORP., DEPT. SR, P.O. BOX 1237,
LYNNWOOD, WA 98046

The A-400x is protected by a combination of relays, which disconnect the speakers if current flow through the output stage reaches levels that might damage the amplifier, and thermal sensors, which detect overheating and put the amplifier into a standby mode until the heat sinks cool to a safe temperature (operation is restored automatically when that occurs). There is also a DC-fault detector that prevents the amplifier from damaging the speakers in the event of an internal failure by instantly opening the output relays. Carver also suggests that if the loudspeakers are not rated to handle the amplifier's power (many are not), it is advisable to place in-line speaker fuses between the amplifier and the speakers, preferably using fuse ratings recommended by the speaker manufacturer.

In our tests, the Carver A-400x surpassed its power ratings by a comfortable margin, in both continuous and dynamic measurements, into loads of 4 or 8 ohms. The distortion ratings were equally conservative. Although the power output ratings are specified (and were easily met) at a 0.2-percent distortion level, the measured distortion was far lower than that, with typical readings in the range of 0.006 per-

The Carver A-400x amplifier comfortably surpassed its power ratings into both 8- and 4-ohm loads.

cent at 200 watts into 8 ohms and less than 0.015 percent at 300 watts into 4 ohms. Input sensitivity was exactly as rated, and the amplifier's noise level was 3 dB lower than rated.

In view of the amplifier's power capability, its moderate operating temperature was also noteworthy. It never became uncomfortable to the touch, even during extended high-power operation, and without requiring a potentially noisy fan.

In addition to being a fully THX-compatible amplifier, the Carver A-400x is equally suitable for any high-quality home audio system, delivering all the low-distortion power anyone is likely to need in a compact, affordable, and easily liftable package. □

MEASUREMENTS

Output at clipping (1 kHz)

8 ohms 259 watts
4 ohms 340 watts

Clipping headroom (re rated output)

8 ohms 1.1 dB
4 ohms 1.0 dB

Dynamic power

8 ohms 232 watts
4 ohms 610 watts

Dynamic headroom (re rated output)

8 ohms 2.2 dB
4 ohms 3.1 dB

Distortion at rated power

8 ohms (200 watts) 0.006%
4 ohms (300 watts) 0.013%

Sensitivity (for 1 watt output into 8 ohms)

..... 100 mV

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

..... -94 dB

Frequency response

..... 20 Hz to 20 kHz +0, -0.2 dB

JOCK P. LEUNG



Grundig DX-1100 Loudspeaker System

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

Grundig, a well-known German manufacturer of radios and other consumer electronic products, has recently entered the North American hi-fi market with the DX-1100, a compact and inexpensive two-way speaker system. It is distributed by Lextronix and sold by mail order through Willabee & Ward with a thirty-day return option for full refund if you are not satisfied (return shipping charges paid by them).

The DX-1100 is based on a 6½-inch long-throw woofer in a vented enclosure, with a third-order (18-dB-per-octave) crossover at an unspecified frequency to a 1-inch soft-dome tweeter that incorporates magnetic-fluid cooling and damping. The tweeter is protected by an automatically resetting device. The woofer's butyl-rubber surround is said to extend the driver's life and to absorb excess energy at the outer edge of the cone.

The DX-1100's enclosure has beveled front edges and a removable black cloth grille. Gold-plated multiway

binding-post input terminals are recessed into the rear of the cabinet. The woofer's vent opening is on the front of the cabinet, allowing the speaker to be placed close to a wall without interfering with its low-bass output.

The drivers are magnetically shielded so that the speakers can be placed close to a video monitor or TV set

DIMENSIONS

8½ INCHES WIDE, 14 INCHES HIGH,
10 INCHES DEEP

WEIGHT

14½ POUNDS

FINISH

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PRICE

\$300 A PAIR PLUS SHIPPING AND HANDLING

MANUFACTURER

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USER'S REPORT



JEFFREY KREIN

Jamo THX-1 Home Theater Speakers

DAVID RANADA • TECHNICAL EDITOR

Denmark-based Jamo, which says it is Europe's largest loudspeaker manufacturer, has capped its home theater line in an impressive manner by introducing the Continent's first native-born Home THX speaker system. Like almost all other complete Home THX speaker systems, the \$3,999 THX-1 comprises seven speakers in total — three identical speakers for front left, center, and right, a pair of surround dipoles, and two subwoofers, all of which are also available separately. Jamo has added some unique touches that may make its system easier to deploy in your listening room.

The magnetically shielded Jamo LCR One (\$649 each), a three-way system with five drivers, is the most complex Home THX front speaker we have tested. It has a single, overload-protected, 1-inch dome tweeter vertically flanked by two 3-inch cone midrange drivers, which are in turn vertically flanked by two 5-inch cone woofers. Jamo says the combination of a single tweeter with dual midranges gives "the reproduction of dialogue more body and clarity" than speakers using two or three tweeters. Crossover frequencies are 1 kHz from

woofers to midranges and 3 kHz from midranges to tweeter. Sensitivity is given as 88 dB sound-pressure level (SPL) at 1 meter with a 2.83-volt input, system impedance as 4 ohms.

Mutual interference between driver outputs resulting from the symmetrical vertical array of matching drivers produces the restricted vertical-dispersion pattern required of THX front speakers. The layout also accounts for the height of the speaker (21½ inches). But its width (17 inches) and unusual shallowness (only 5 inches deep) have to some extent been determined by Jamo's intent that the LCR One should be mountable on a wall if desired, and mounting brackets are supplied for that purpose. The shallow enclosure brings the drivers close to the wall, reducing interference effects from wall reflections, and the speaker's unusual width enables its front panel to serve effectively as an extension of the wall through a large portion of its operating range. Before mounting an LCR One on your wall, however, be sure that it will support the speaker's hefty 27-pound weight.

Each LCR One has two pairs of multiway binding posts for amplifier connections, compatible with banana

plugs, spade lugs, or bare wires — the same type of connector used in the other speakers of the system. One pair is labeled "wall-mount," for use when the speakers are hung on a wall, the other pair "free-field," for use when the speaker is not wall-mounted. The wall-mount terminals should also be used when the center LCR One is near or on the floor beneath a video screen, its most likely location. Use of that connection corrects for the reinforcement of upper bass caused by the proximity of a room surface.

Jamo's Surround One speakers (\$798 a pair) are five-driver quasi-dipole systems. On each of the Surround One's end panels — facing in opposite directions and in opposite phase — are a 3-inch cone woofer and a 1-inch dome tweeter. On the center panel is a third 3-inch woofer, which operates only below 150 Hz to help the speaker "achieve sufficiently deep bass" from the compact (16 x 10 x 5-inch) cabinet. Crossover frequencies are given as 100 Hz and 3 kHz, sensitivity as 89 dB SPL, and impedance as 4 ohms. The Surround Ones come with both wall- and ceiling-mount fixtures and should be placed so that a minimum of 2 feet of space is available in front of each end panel. Each enclosure weighs about 12½ pounds. Unlike the other speakers in the system, which are available only in black, they are also available in white.

The Sub One magnetically shielded subwoofer (\$649 each) — two of which are required to obtain by-the-book THX-system bass levels, though one will probably suffice in many listening rooms — is quite large (17 x 30 x 16½ inches) and heavy (59½ pounds). Of bass-reflex design, with a 12-inch long-throw woofer, the Sub One has its port on the front panel so that it can be flush-mounted into a wall (the connections are on the back, however). It is passive and has no internal amplifier or crossover. If you use a Sub One as part of a Home THX speaker system in conjunction with a non-THX surround decoder, the crossover frequency should be set around 80 Hz. The Sub One's rated impedance is 8 ohms, enabling two of them to be driven safely in parallel by a single amplifier channel. Sensitivity is given as 87 dB SPL.

The manual suggests using the two Sub Ones as bases for the front left and right LCR Ones to put the latter at the right listening height. Accordingly,

the Sub One has two screw holes on its top for mounting a metal L-bracket that in turn screws into the back of an LCR One. When attached in this way, a large and quite massive (87½ pounds) "full-range" speaker is created. The arrangement is only mechanical, however, as you still need to separately amplify and cross over each LCR One and its attached Sub One.

Some other Home THX systems permit mounting the front left and right speakers on top of matching subwoofers, but Jamo's is the first we have tested to have that provision. Although it may give some placement advantages in some situations, I can't imagine how it will make the speakers easier to integrate into a room's decor.

More important, in most listening rooms placing the woofers under the satellites will eliminate one of the fundamental advantages of separate woofer modules: the ability to locate the woofers wherever they produce the smoothest bass response and the satellites where they provide optimum imaging. Those locations are hardly ever identical. For most home theater listening rooms, that will mean putting the subwoofers in or very near a room corner while the satellites are placed close to ear level on either side of the video screen, possibly on the wall.

In our listening room, in fact, the Jamo system produced its best sound and flattest response when the subwoofers were separated from the LCR One satellites and placed against the left and right walls with the backs of their cabinets about 2½ feet from the corners. Interestingly, the woofers always blended most evenly with the satellites when the latter's wall-mount inputs were used, even when the satellites were being operated on stands several feet away from the walls. In our listening room at least, using the free-field connection resulted in a 4- to 6-dB response bump in the octave centered around 100 Hz.

Mounting the woofers under the satellites as recommended by Jamo produced a less even bass response. Specifically, it introduced a wide response peak at 50 Hz and caused lower frequencies to roll off a little more quickly. The rise at 50 Hz was somewhat correctable by readjusting the woofer level, but not the higher cutoff.

There are two things to keep in mind with regard to those response measurements, however. First, they represent our listening-room setup,

which may not be the same as yours. Second, considerable experimentation with subwoofer placement and level, preferably with suitable test tones and a sound-level meter or spectrum analyzer, may be necessary to optimize bass performance. That is true for any separate-woofer system. It's possible that I just didn't find the right combinations of location and level for the stacked satellite/subwoofers.

Back to that "flattest response" to which I've been comparing everything. It was, indeed, quite flat. Above 160 Hz — above the bass, where woofer placement, room resonances, and crossover operation have considerable effect on response regularity — the system's on-axis front-channel one-third-octave response was approximately ±2.5 dB all the way up to 16 kHz. And in our near-corner positions, each subwoofer produced usable output with very low audible distortion down to our test limit of 20 Hz.

That is excellent performance, and the speakers did have a markedly neu-

The system withstood every watt I threw at it and was capable of producing colossal amounts of clean sound.

tral sound quality. They sounded close to another model of Home THX front speaker we had on hand for comparison, but not identical to it. The Jamo's distinguishing characteristic was a slight forwardness caused by the general flatness of its response (compared with the slight downward tilt at higher frequencies of the other model) and a very slight tendency to sibilance and steeliness on massed strings, which probably derived from a shallow response dip between 5 and 8 kHz followed by a slight rise from 12 to 16 kHz. The prominence of the latter quality depended greatly on the recording and was not consistently detectable. Moral: Before you buy, always audition speakers with lots of different music.

The system ably withstood every watt I threw at it (I had 700 watts available) and was capable of produc-

ing colossal amounts of clean sound when called for by movie sound effects. Imaging, with the LCR One satellites used free-field, was superb in definition and left-right placement, as well as in depth, the last more evident with classical music than with pop or, least of all, soundtracks. When I placed the satellites against a wall, imaging deteriorated slightly, as usually happens with close-to-wall speaker placement, with image depth suffering most. The surrounds, placed to the sides of the listening position as recommended, sounded fine, though I couldn't find any normal program material that clearly exercised their claimed extended bass capabilities.

Most Home THX front speakers we've tested should be heard essentially on-axis, both at home and during a showroom audition. That's because the typical THX driver layout — intended to produce the required vertical-directivity pattern — causes the high-frequency response to fall off quite rapidly as you move above or below the forward axis. Probably because of the LCR One's five-driver arrangement, that didn't happen as markedly with the Jamo system, whose octave-to-octave frequency balance, even when playing an extremely critical pink-noise test signal, changed far less than usual as I moved up and down in front of the speakers. It even measured slightly flatter when I placed the mike about 20 degrees off-axis vertically.

That is actually good, by the way, for depending on how much you like to slouch in your listening chair, you may be slightly below the axis of the left and right front speakers, especially if you use the combined LCR One/Sub One hookup, which locates the tweeter 41 inches above the floor. Also, you have to worry less about tilting an LCR One center speaker toward seated ear height if it is used above or below the video screen, though you should always make the attempt.

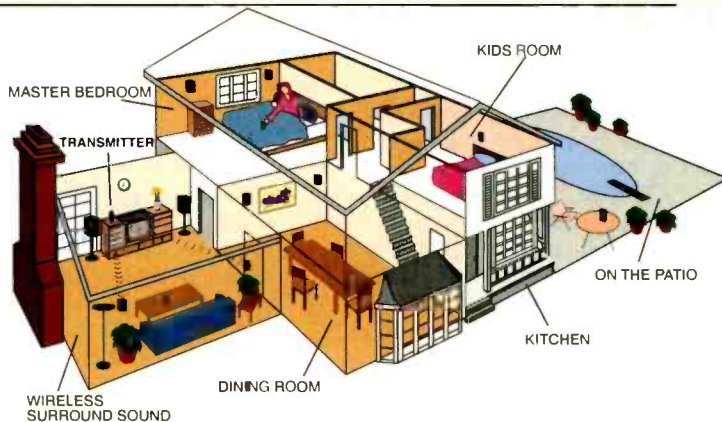
Any such attempts, and all efforts to optimize bass response, will be amply rewarded by this speaker system, which will then deliver superbly neutral reproduction of soundtracks and music. Jamo's THX-1 system shows that Americans have no lock on Home THX speaker design. □

*Jamo Hi-Fi USA, Inc., Dept. SR,
425 Huehl Rd., Bldg. 8, Northbrook,
IL 60062*

HOW TO GET SPEAKERS IN EVERY ROOM WITHOUT WIRES.

Chase Technologies' new 900 MHz wire-free speaker system provides state-of-the-art sound reproduction throughout your home without wires or power cords!

By Bob Rapoport



Imagine having sound in every room of your house, and in your backyard. Up until now, that meant running long speaker wires under carpets, over door jams, or worse, hiring a contractor to come out and run the wires through your walls. The cost and complexity was just too much to handle, so most people just didn't bother.

THE BREAKTHROUGH

In 1989, the FCC approved a special frequency band for in-home broadcast of radio frequencies. Chase Technologies, one of the world's leading producers of wireless products, took advantage of this ruling by designing a special speaker system. Operating at 900 MHz, this new Chase system can broadcast the sound from your stereo, tv, vcr, or cd player through walls, floors, ceiling, and even glass, up to a range of 180 feet!

HOW DOES IT SOUND?

Up until now, the so-called wireless speakers that have been on the market have been disappointing. The earlier generation worked on the 49 MHz bandwidth, and had noise and drift problems, as well as poor fidelity. Before that, one company even had a system that went through the electrical wiring in your house. In both cases, the performance left a lot to be desired. The new Chase system is really the first "high fidelity" stereo speaker system to perform at a level that rivals the hard wired conventional speaker in terms of clarity, detail, and overall hi fi reproduction.



CHASE WIRELESS SPEAKERS ARE JUST \$99 EA

WHAT DOES "TRULY WIRELESS" MEAN?

Simply put, it means that you can operate the speaker with no signal wires or power cords. To our knowledge, the Chase system is the first to offer truly wire-free operation. How? The Chase system provides a choice of two types of power: you can either plug it in the wall if an AC outlet is convenient, or you can use 6 "C" cell batteries for up to 80 hours of wire-free sound reproduction. If you use re-chargeables, they can be re-charged

right inside the speaker! Special "ALC" circuitry eliminates drift and prevents background noise, another feature exclusive to the Chase system.

SURROUND SOUND HOME THEATER APPLICATIONS

For those of you who have been thinking about adding surround sound, but have waited because you did not want to run speaker wires across your living room floor, the Chase WS-5500 system is the perfect solution. The optional wall mount bracket allows you to mount the speaker in just the right place, and brings the thrill of surround sound home theater to you simply and affordably.



A SINGLE TRANSMITTER WITH AN UN-LIMITED NUMBER OF SPEAKERS

The powerful 900 MHz transmitter plugs into any line level audio output, and broadcasts to any number of wireless speakers placed around your home. The speakers themselves are available in black or white, have built-in amplifiers, and they are made of a sturdy ABS composite which is perfect for outdoor and indoor use. Each WS-5500 system comes complete with 1 transmitter, 2 speakers, and 3 AC adapters.

THE CHASE TRANSMITTER CAN BROADCAST SOUND THROUGH WALLS, FLOORS OR GLASS OVER A RANGE OF 180 FT.....JUST \$79



STEREO OR MONO; YOU DECIDE

Each speaker has an internal switch which allows you to assign a role; right, left, or mono. This allows you to run a stereo pair in one room, while at the same time, you can put a single speaker in the kitchen or bathroom. Multi-zone sound systems can cost thousands of dollars if done the old fashioned way with wires through the walls of a house. The Chase wireless system makes it easy!

PRIVATE LISTENING

One of the great ways to listen to music or television is through a headphone system. Chase's



ADD THE CHASE WIRELESS HEADPHONES FOR \$99

WH-550 headphone is the perfect add-on to your wireless system, and works from the same transmitter as the speakers. Sealed, cushioned ear-cups provide a maximum level of comfort and privacy. If you enjoy headphone listening, but have always been bugged by the wire leading to your stereo, you will be amazed at the freedom of movement a wireless design offers.

ONE ROOM OR THE WHOLE HOUSE

With the Chase Wireless System, you can set your whole house up for great music, including your backyard. The WS-5500 system is all you need to get started, or you can buy each piece a la carte. Each speaker and headphone is \$99, and the transmitter is \$79. Remember, all you need is one transmitter to run any number of speakers and headphones

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A/V specialists

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three \$5,000

home theater

systems.

BY REBECCA DAY

Choice

Rob Scott is a technologically savvy 26-year-old with a new job and a new apartment. Mark and Lisa Wilson are busy raising two young children. Jim and Ginny Flynn are empty-nesters in their fifties who love opera. Each of them pays a visit to a local audio/video store with \$5,000 to spend on a complete home theater system — one that includes a big-screen TV. Except for the desire to put together the best system five grand can buy, the shoppers have distinctly different expectations. Scott demands an A/V rig that will accommodate the next generation of surround sound, which makes use of six digital channels. The Wilsons are interested mainly in a system that is easy to operate and capable of delivering full-bodied sound at low volumes

— so they can pop in a movie after the kids are in bed. And the Flynnns want a system that is equally adept at conveying the musical beauty and emotion of Mozart's *Don Giovanni* and the impact of action/adventure flicks like *Die Hard with a Vengeance*.

To see just how far \$5,000 can be stretched, we asked a trio of well-known specialty audio/video dealers to recommend home theater lineups to meet the diverse needs of our hypothetical customers, each taking one of the three. Note that many of the prices given for individual components are these dealers' actual selling prices, not the manufacturers' suggested retail prices. In other words, pricing is likely to vary from one region of the country to another. Now, turn the page to see what the A/V specialists have in store for their customers.

Dealer's
Choice

Home Theater For Today— And Tomorrow



Having gone through several computer upgrades in recent years, Rob Scott wants a home theater system that he can easily upgrade to six-channel status as soon as recordings using the new Dolby Surround AC-3 encoding are abundant. An avid sports fan who also enjoys attending live concerts, he wants a system that can recreate the ambience of a live performance as well as deliver surround-sound impact that rivals the local cinema. He'll keep the cassette deck from his college days but wants to upgrade everything else with an eye toward the future. "We'll give him something he can grow into," says Scott Lonsdale, general buyer at Bryn Mawr Stereo and Video in King of Prussia, Pennsylvania.

The system Lonsdale proposes is built around Yamaha's new RX-V2090 A/V receiver. In addition to offering Dolby Pro Logic surround decoding and seven channels of power, it has an input for a separate outboard AC-3 decoder (Yamaha's DDP-1 just recently hit store shelves). The well-stocked receiver sports ten ambience settings, including Dolby Pro Logic-based 70mm Cinema DSP, a sports setting, and music settings that call up acoustic blueprints of the Roxy Theater in Los Angeles, New York's Village Gate, and Anaheim Stadium. The receiver also has multiroom facilities for playing two sources simultaneously in different rooms. Rated to deliver 100 watts to the three front channels and 35 watts each to four effects channels, the RX-V2090 has more than enough power to fill the large (20 x 20-foot) living/dining area in Scott's apartment.

To produce the most realistic home theater experience possible, Lonsdale suggests the Pioneer CLD-D504 CD/laserdisc combi-player. "I recommend buying a laserdisc player before a VCR because it opens up greater possibilities for the home theater sooner," he says. In keeping with the customer's crusade against obsolescence, the CLD-D504 sports an AC-3 RF output. The player also features auto-reverse — a must, Lonsdale says, for the interrupted enjoyment of movies at home. And when it's party time, Scott and his friends can break out the karaoke microphone that comes with the player and sing along.

For the natural, live sound Scott is looking for, Lonsdale recommends a full suite of Mirage speakers — a pair of M-590i mains, an MC-si center,

and a pair of MBS surrounds. Thanks to their bipolar design, he says, the 3-foot-tall M-590i's deliver three-dimensional imaging and lifelike sound without coloring the music. The MBS surrounds are also bipolar, which enhances overall spaciousness. As for the center speaker, there was no contest. "The MC-si produces the most lifelike human voices I have had the pleasure of hearing from a loudspeaker," Lonsdale says.

RCA's high-end ProScan line gets the nod on the video side. The sleek PS31108 31-inch stereo TV gives a big-screen experience with direct-view quality, Lonsdale says, and its picture-in-picture feature is perfect for

\$5,000 HOME THEATER

Bryn Mawr Stereo and Video, King of Prussia, Pennsylvania

ProScan PS31108 31-inch TV (\$1,000)

Pioneer CLD-D504 combi-player (\$500)

ProScan PSVR62 VHS Hi-Fi VCR (\$400)

Yamaha RX-V2090 A/V receiver (\$1,500)

Mirage M-590i speakers (\$650 a pair)

Mirage MC-si center speaker (\$500)

Mirage MBS surround speakers (\$350 a pair)

monitoring two sporting events at once. It also has a comb filter that helps sharpen the picture. Lonsdale completes the system with a ProScan PSVR62 VHS Hi-Fi VCR, featuring VCR Plus programming with cable-box control for simplified recording. And to help fight coffee-table clutter, either of the universal remotes supplied with the TV and VCR can be used to control both components.

"This system provides incredible performance from the start, but it's still very flexible in its ability to be upgraded," Lonsdale says. "It accommodates future technologies while making the most of today's state of the art." And the system will become even more versatile if he can persuade Scott to add a Mirage subwoofer and a Yamaha CD changer down the road. "It's a system I'd be proud to own," he concludes.

PHOTO BY DAN WAGNER, VIDEO IMAGE FROM THE MASK (NEW LINE), DOMAN'S BERNINI BACK FROM TEK TECHNOLOGIES

Family

Putting together a home theater system for a family presents a special set of considerations, according to Steve Firszt, owner of Good Vibes in Champaign, Illinois. Above all, ease of operation is essential, both for Mark and Lisa Wilson and for their four-year-old daughter and six-year-old son. How loud a system can play is not nearly as important as how good it sounds at low volume levels while the kids are asleep. And since a trip to the video store is a Friday-night routine for the Wilsons, the primary video source must be a VHS VCR.

Beginning at the heart of this family affair, Firszt suggested Denon's AVR-1500 A/V receiver, which delivers 70 watts per channel across the front and 20 watts a side for the surrounds — enough power to handle the Lion King's mighty roar. The receiver performs well even at low volumes, and it boasts Denon's new Discrete Dynamic

System Call buttons at the top of the remote will let the Wilsons program their two most often used source/surround settings for easy recall.

To accommodate the Wilsons' wide-ranging musical tastes, Firszt suggested adding a Denon DCM-340 five-disc carousel CD changer. His favorite feature: Up to four discs can be changed while a fifth is playing.

On the speaker front, Firszt endorsed Polk Audio's LS series, which he calls one of the best-sounding timbre-matched home theater systems in its price range. The three-way LS50's, for the left and right front channels, are complemented by the horizontally oriented CS350LS center speaker and a pair of LS f/x surrounds. Polk provides for a variety of placements of the LS f/x, which can be mounted to a ceiling or wall using built-in mounting hardware and a single screw. Also for placement flexibility, the f/x's can be switched between bipolar (in phase) and dipolar (out of phase) operation.

"A lot of people use old speakers for the center or rear," Firszt says, "but once you've heard the seamless quality of a timbre-matched speaker set, you'll never again want to team a speaker from Manufacturer A with one from Manufacturer B. You don't want to be able to tell when one speaker hands off the sound to another."

Firszt's hands-down choices for the Wilsons' video were Mitsubishi's CS-35303 35-inch direct-view TV and HSU-550 VHS Hi-Fi VCR. "The 35303 combines big-screen excitement with picture brightness," he says, which is especially important in a family room where ambient light cannot be easily controlled. The set's Invar shadow-masked tube also helps to keep a consistent color balance between dark and light scenes, he adds. The HSU-550's key features include VCR Plus programming that even the kids can use — if Mom and Dad let them! — and single-remote operation of not only the TV and VCR but the cable box as well. The deck also has front-panel A/V jacks for a video-game player or camcorder.

Finally, Firszt topped off the Wilsons' list with 50 feet of New MonsterCable wire for the front speakers and 60 feet of Monster Cable's unobtrusive SuperFlat Mini wire for the surrounds.

When everything's in place, the Wilsons will wind up with what Firszt calls "the family plan. There's something for everyone."

\$5,000 HOME THEATER

Good Vibes,
Champaign, Illinois

Mitsubishi CS-35303 35-inch TV
(\$1,699)

Mitsubishi HSU-550 VHS
Hi-Fi VCR (\$449)

Denon DCM-340 CD changer (\$300)

Denon AVR-1500 A/V receiver (\$750)

Polk Audio LS50 speakers (\$778 a pair)

Polk CS350LS center speaker (\$399)

Polk LS f/x surround
speakers (\$499 a pair)

Monster Cable speaker wire (\$125)

Surround Circuit (DDSC), which Firszt feels provides the most spacious and noise-free surround effects of any receiver in its class. In addition, it has an RDS (Radio Data System) tuner that can receive the special text messages — mostly station call letters and format at this point — now broadcast by some radio stations.

But the receiver's true family appeal lies in its well-designed remote control. The buttons are grouped by function, shape, and color, making it easy for everyone to operate. In addition,



Style A/V

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Choice



Dealer's
Choice

Home Theater With A Musical Bent



Everybody's talking home theater these days, but Phil Murray, the marketing manager at Listen Up in Denver, believes that it all comes down to sound. "A lot of people come in asking about home theater, but after talking with them we discover that what they really want is great sound quality," he says.

Case in point, Jim and Ginny Flynn, the fiftysomething couple assigned to Murray. With the kids out of the house and through college, the Flynns can now splurge a little on themselves, so they've decided to investigate home theater. They don't watch much broadcast TV, but they do rent movies; their real passion, however, is opera. They hold season tickets to the local opera company and would like to build a library of their favorite audio and video recordings.

With the couple's musical leanings in mind, Murray starts with a pair of Vandersteen 1B speakers, which he says image very well because the tweeters are mounted on small "floating" baffles. The 1B's also offer good value, he notes, with money put into the crossover design instead of more expensive cabinetry. Choosing a center speaker was easy since Murray considers Vandersteen's VCC-1 to be one of the best centers around. Its coaxial driver is very natural-sounding, he says, making it ideal for dialogue intelligibility. Murray suggests a pair of Definitive Technology BP2 bipolar surround speakers to round out the speaker lineup. Sonically, they blend in nicely with the Vandersteens, and they're easy to mount using the supplied wall brackets, he says.

Murray tapped Rotel for power, control, and surround processing. He chose the RSP960AX A/V preamplifier because "it offers the best sound quality for the money instead of a lot of bells and whistles." Good Dolby Pro Logic performance, five A/V inputs, a clean look, and easy remote-control operation put the preamp over the top.

Murray says sonic integrity and flexibility make the Rotel RB956AX amplifier the perfect power source for this system. With six bridgeable channels, the amp can be configured in a variety of ways to power from three to six channels. Murray's blueprint calls for a five-channel setup, sending 30 watts each to the front speakers and the surrounds and 90 watts (bridged) to the center speaker. When the Flynns are ready for a power upgrade, he will suggest running the RB956AX in its

three-channel mode to the center and surrounds and adding Rotel's 120-watt-per-channel RB980BX amp to power the left and right front speakers.

For the Flynns' opera library, Murray recommends the permanence of CD's and laserdiscs and the flexibility of a CD/laserdisc combi-player as a one-stop-shopping solution. His choice is Denon's LA-2500 combi-player, which provides "exemplary audio and video quality" as well as autoreverse play and a dedicated CD drawer.

For a big picture to match the big sound, Murray recommends the Sony KV-32V15 32-inch TV. The set provides good picture quality without the beefed-up audio package and some of the bells and whistles of more expensive models.

To wire up the system, Murray sug-

\$5,000 HOME THEATER

Listen Up,
Denver, Colorado

Sony KV-32V15 32-inch TV (\$1,199)

Denon LA-2500 combi-player (\$700)

Rotel RSP960AX A/V preamp (\$600)

Rotel RB956AX power amp (\$500)

Vandersteen 1B speakers (\$700 a pair)

Vandersteen VCC-1 center
speaker (\$500)

Definitive Technologies BP2 surround
speakers (\$500 a pair)

Panamax Coamax 6 surge
protector (\$129)

Wire and connectors (\$137)

gests Kimber 4 PR speaker cable, AudioQuest Turquoise interconnects, and Monster Cable's Silver Video cable for connecting the combi-player to the preamp. Finally, to protect the system against electrical surges, he recommends the Panamax Coamax 6 surge protector.

Having exhausted the budget, Murray plants a couple of upgrade ideas for the Flynns to consider later: a Velodyne powered subwoofer and a Sony Digital Satellite System. Between their opera library and 150 channels of satellite TV, he says proudly. "They may never leave home again!" □



PHOTO BY DAN WAGNER. VIDEO IMAGE FROM "THE MASK" (NEW LINE); WU-350 ARCO SYSTEM RACK FROM BEI; OGGERT



Patented Acoustimass® bass module. Helps make a 60-ton runaway train sound like, well, a 60-ton runaway train. Hides out of view.

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The long-awaited day has finally arrived! After weeks of tireless shopping, you now have all of the components you need to convert your family room into the mini-theater you've been dreaming about. You replace your old receiver with a new Dolby Pro Logic-equipped model, hook up your new stereo hi-fi VCR, and run wires to your new center and surround speakers, making sure everything is tucked neatly away. After dinner, the family settles down with soft drinks and a bowl of popcorn, ready to be entertained. You slip *Jurassic Park* into the VCR, press play with a flourish, and wait for the credits to roll. Seconds later, your dream turns into a

SURROUND SOUND PROBLEM SOLVER

The do's and don'ts of home theater ■ by Bryan Little

nightmare: Sound is coming only from the center speaker! Where's the enveloping surround sound you experienced in dealer showrooms?

Panic-stricken, you spend what seems like an eternity fiddling with buttons, checking wires, and trying different tapes. Still, only one of your five speakers is playing. The kids become restless and head upstairs for bed, and your wife leaves the room shaking her head. The next day you return the receiver to your dealer, only to find out there's nothing wrong with it! By now, your blood is boiling and your mind is racing: Maybe home theater isn't everything it's cracked up to be after all.

Sound familiar? If you or someone you know has experienced similar frustration in setting up or using a surround-sound system, you're not alone. Such mishaps are actually becoming more common as surround-sound tech-

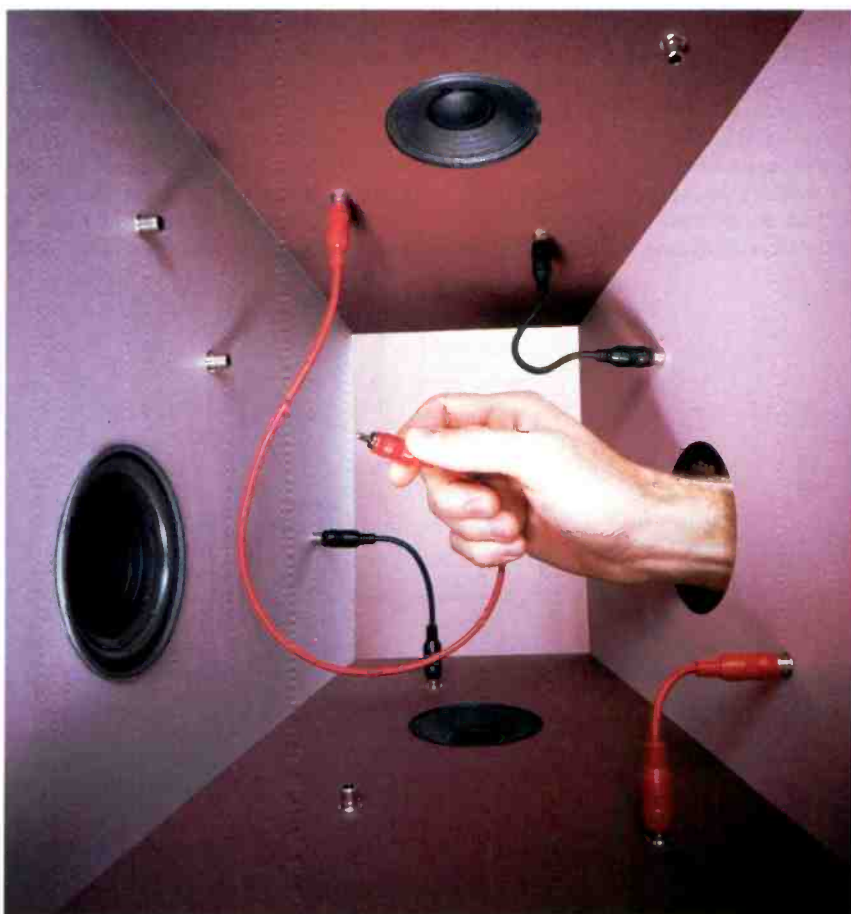


PHOTO BY DENNIS POTOKAR

SURROUND SOUND PROBLEM SOLVER

nology — and misinformation about how it works — spreads like wildfire across America. What's the problem? For one, there are usually several ways to hook up a surround-sound system. And certain kinds of equipment — TV's with on-screen graphics or picture-in-picture (PIP), for example — require specialized hookups to work properly. Then there's Dolby Pro Logic, the de facto standard for surround-sound decoding, which requires that a very specific set of rules be followed for optimum performance.

While excellent information on how to set up and operate surround-sound equipment is available from a number of sources, including Dolby Laboratories and Lucasfilm (the inventors of THX), it doesn't always find its way into the hands of consumers. To make things worse, the wiring diagrams published in the owner's manuals of many VCR's and A/V receivers are confusing *and* out of date.

I work in the Answer City technical-support department of Circuit City, a chain of audio/video stores with more

than 300 locations nationwide. Every day we receive thousands of calls from customers who are on the verge of returning a component or are simply upset because nothing seems to work the way it did in the store. Having listened carefully to more than half a million callers, we've learned that the frustration people encounter when setting up or using a new surround-sound system is often caused by a misunderstanding of how surround equipment works or a mistake in wiring. The following list of do's and don'ts, compiled by Answer City technicians, is designed to put you on the path toward a frustration-free home theater experience.

Do use the best-quality media or TV signal at your disposal. Until the new digital videodisc (DVD) comes down the pike next year, laserdisc offers the best picture and sound quality you can get at home. But if videotape is your format of choice — as it is for most folks — use the highest-quality tapes you can find. The newer the tape, the better. Trying to impress your friends with a worn-out rental tape or a copy of *Top Gun* you bought in 1986 is begging for disappointment. Videocassettes don't last forever, and the audio tracking is usually the first thing to go. And when it goes — as it usually does with rental tapes that have been played a couple of hundred times — you'll see a poor-quality picture and hear distorted sound or, worse, sound that pops in and out of surround mode. (Excessive

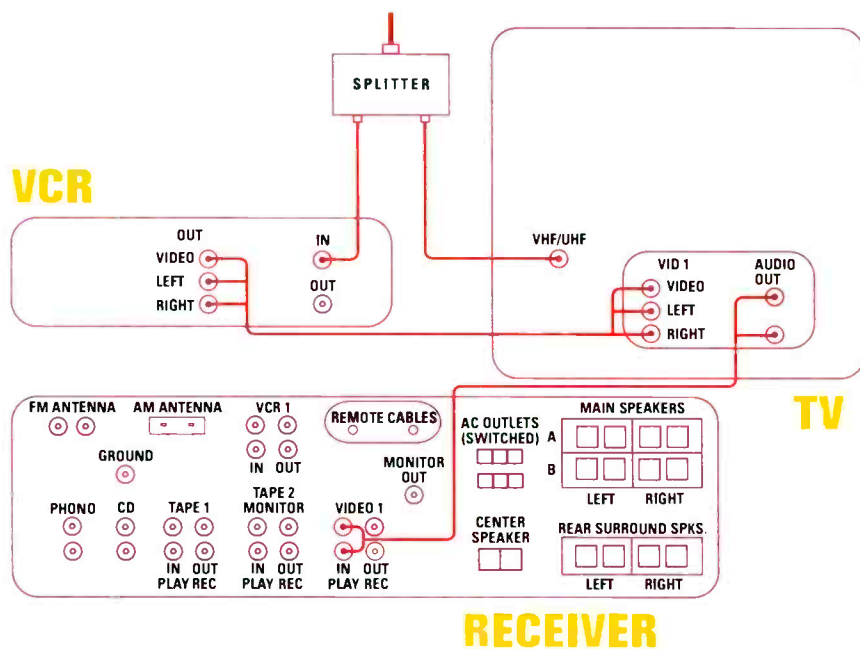
tape wear can make it difficult for a VCR's tape head to lock on to the hi-fi stereo soundtrack, which contains the surround encoding.)

When it comes to high-quality TV signals, look to premium movie channels (like HBO and Showtime) and music-video channels on the cable side, prime-time shows on the network side. High-quality signals are also typically available via the new Digital Satellite System (DSS).

Do keep the hookup as simple as possible. Avoid switchboxes and unnecessary connections that make the system awkward to operate — especially if you want grandma or the kids to be able to use it! The diagram below depicts a hookup scenario for surround systems that works well for most people. (Note: If your system has a cable box, it goes between the splitter and the VCR.) It provides the best combination of simplicity, flexibility, and performance, *and* it is compatible with single-tuner TV's offering picture-in-picture (PIP). Feeding the audio portion of the signal through the TV (via RCA cables, *not* the coaxial RF cable) insures that the sound for whatever program appears on the screen is automatically fed to the audio/video receiver. You could route the signal through your receiver before it hits the TV, but that makes the setup more complicated; you may have to experiment to find a hookup that suits your needs.

Do keep the cables as short as possible. Use the shortest possible signal path from the audio source to your A/V receiver or surround processor. Running an audio signal through several pieces of equipment or over very long cable runs may in some cases cause significant signal degradation, so try to avoid putting the audio electronics in one room and the TV and VCR in another. Also make sure that the AC power cords for all system components are plugged into a single multisolet wall outlet, or a power strip, to minimize noise-producing ground loops.

Don't use the coaxial RF cable supplied with your VCR to feed the audio signal to your TV. Always pick up the signal from the VCR's audio-output jacks using standard RCA cables; otherwise you'll send a *mono* signal through your system! VCR makers encourage you to




use the coaxial cable by giving you one in the box, but most owner's manuals fail to mention that VCR's were never designed to retransmit a stereo signal through the coaxial cable. Designing a VCR to modulate stereo audio onto an RF television signal (Channel 3 or 4) would add several hundred dollars to the cost of the unit, which is why it is never done.

Don't expect Dolby Pro Logic to work with all TV signals. A weak stereo TV signal — or one with poor channel separation for any reason — is the No. 1 cause of customer complaints that a surround-sound system is not working correctly. Proper decoding of Dolby soundtracks requires good stereo separation in the source signal. If the received signal is weak, the TV tuner's audio circuitry will not be able to achieve its maximum channel separation (which in most cases will be mediocre itself). And the poorer the channel separation, the less output you'll get from the surround speakers (hence, the less spaciousness), until the sound field eventually collapses and only the center speaker produces sound. Remember, too, that many TV programs are not surround-encoded, and many programs broadcast in stereo are really substantially mono most of the time.


Even cable-TV channels are not beyond suspicion. The films and reruns shown daily by most local and national cable stations are usually taped copies that have been downloaded in "packages" from a satellite to the station libraries. After traveling thousands of miles through countless circuits, the compressed and limited version of the audio signal that eventually reaches your TV may be a mere shadow of the original. And some cable systems retransmit *all* programming in mono. So when some TV shows don't sound good in Pro Logic mode, don't automatically blame your equipment.

Don't trust the stereo light on your TV or VCR. The light is only an indicator that the TV or VCR's tuner is receiving a stereo carrier signal (which activates its stereo circuitry), not that the signal being received is actually stereo. Broadcasters routinely transmit stereo carrier signals 24 hours a day even when the programs being broadcast have mono soundtracks, so the stereo indicator light is not a reliable indicator of signal content. And remember that a

Take the 
advice given
here and you
just might spare
yourself some
aggravation.



Besides,
the popcorn will
still be warm

when you're
ready to 

enjoy your new
home theater.



VCR's stereo indicator lights up only when its tuner is receiving a stereo TV carrier signal, not when you're playing a stereo videotape.

Don't use an outboard equalizer in a tape-monitor or processor loop when your system is in Dolby Pro Logic mode. In order for Dolby Surround to be decoded properly, the amplitude and phase characteristics of the original signal must be intact. Equalizing the signal before it hits the surround processor alters those characteristics, which can cause some odd audio effects. If the signal is altered beyond recognition — at least as far as Pro Logic is concerned — you may even hear pops or a crackling sound from the speakers. This "don't" also means that you won't be able to effectively use an equalized speaker system (very rare these days, anyway) in your home theater unless you have a separate surround processor or an A/V amp or receiver with pre-out/main-in loops for the channels feeding such speakers.

Even if you don't have an outboard equalizer and are simply running the audio signal through the TV before it hits the receiver (as recommended above), make sure that the TV's bass and treble controls are in their flat positions and that its surround mode (if any) is switched off. While it's very tempting to turn on all of the TV's effects to create "super surround," the result is likely to be sound that will make you cringe.

Don't expect the same spectacular results that you get from a Dolby Surround-encoded laserdisc or videocassette in Dolby Pro Logic mode from unencoded audio-only sources. Even though a stereo signal that's not encoded for Dolby Surround can produce a pleasant ambience effect in Pro Logic mode, many audio sources — including LP's, some FM stations, and certain popular CD's — simply lack the channel separation and clarity to achieve that. And even with ones that do, the results will be unpredictable and sometimes strange. Fortunately, most A/V receivers also offer a few music-surround settings designed to enhance ordinary two-channel stereo recordings. The key is experimentation. Flip through the various modes until you find one that sounds right. Just remember: The effects you hear can be as varied as the sources you use. □

Getting the most out of FM

HOW TO SQUEEZE EVERY
LAST DROP OF PERFORMANCE
FROM YOUR RADIO

If not for FM radio I probably wouldn't be writing about audio today — let alone FM. As I grew up in Boston back when that city had at least five great classical stations on the air, FM opened up to me realms of music that extended well beyond my father's rather limited (sorry, Dad) collection of monaural Benny Goodman and Arthur Fiedler LP's. Twice a week, for instance, I could listen to live Boston Symphony broadcasts through what was by far the best-sounding hi-fi source available at the time, and still among the best even today. Then, about 1969, WBCN (Boston Classical Network) began a pioneering late-night rock show hosted by Peter Wolf, front-man of the J. Geils Band. Marking the genesis of "alternative FM," which would soon take the airwaves by storm, Wolf played music from new bands like Traffic that diverted my path to rock-and-roll and electric guitars, back to "serious" music, and ultimately to a career in audio journalism.

Since then, FM radio has evolved

into a melting pot for every imaginable kind of music. Whether it's created by bowing, blowing, plucking, vocalizing, banging, or fingering, you'll find it on the FM dial, and with excellent stereo fidelity. The cost of admission can be as low as a \$29 personal-headphone set or a ride in the car. In the wake of the CD revolution we tend to dismiss FM as a source of casual background music. Yet it's a rare American who doesn't spend at least an hour a day listening to FM music on the road, at the office, in a waiting room, or at home.

Make no mistake about it: FM is a true high-fidelity medium. In fact, despite stereo FM's limitations — its 15-kHz high-frequency limit and a real-world dynamic-range potential of perhaps 75 dB — with many types of music most of us would be hard put to distinguish between a fully optimized FM broadcast of a CD and the original under typical conditions. Nevertheless, it's impossible to deny that FM is in

its twilight years. Sometime in the next decade digital audio broadcasting (DAB) will assume the radio mantle, and FM will eventually fade away (pun intended). For at least the next five or six years, though, FM will remain king of the radio hill. So it's eminently sensible to consider how we can optimize the medium we already have.

First, a quick review. FM broadcasting works by frequency modulation (of course!) of a steady, 100-megahertz-range carrier signal. Boston's WBCN, for example, uses a carrier at 104,100,000 hertz (that's 104.1 MHz on the FM dial). The carrier is modulated — caused to rise and fall slightly in frequency — by the amplitude of the audio signal being transmitted; an FM tuner subtracts the carrier frequency and is left with the music. The system provides excellent audio quality, with a wide frequency response and relatively low noise, though at a very real sacrifice in broadcast range compared with AM radio.

For stereo FM, a second signal called a subcarrier is piggy-backed onto the main signal, and a pilot tone

BY DANIEL KUMIN



McIntosh's new MR7084 component tuner with Terk's AM-FM Q antenna.

RALPH MASULLO

is tacked onto that. The main carrier bears the mono audio as before, while the 38-kHz subcarrier transmits the left minus right (L - R) component of the stereo program — that is, the stereo information. The 19-kHz pilot tone simply tells a stereo tuner that the station is broadcasting in stereo (and assists in demodulating the signal). Mono tuners simply ignore the pilot tone and the subcarrier.

Interestingly, several demonstrably superior systems were proposed before the FCC selected this rather Rube Goldberg arrangement in the 1950's. These were passed over in favor of the stereo FM system described above not only because the latter is fully compatible with mono radios but also because it offers yet another channel, the entirely discrete and commercially lucrative SCA (subsidiary carrier authorization) channel. The SCA channel was (and is) widely used for distributing background music to supermarkets, dentists, and the like, and today it is used in some paging and data-distribution systems as well.

What's important to understand

from all this technological soup? Principally, that FM stereo is hard to receive. The stereo component of the signal is substantially weaker than the mono part, which is why stereo frequently drops out and "picket-fences" on your car radio as you drive around, even if you're close to the transmitter. That relative weakness also makes FM sensitive to multipath distortion.



ultipath occurs when an FM signal reflects off of something big — like a mountain or a large building — on its journey from the transmitting tower to your receiver, causing multiple reflected signals to reach your antenna at different times. If the obstruction is close to the direct signal path, the time-shift between the two arrivals is small, and the tuner has a hard time choosing between the original and the "ghost" (the same phenomenon creates ghosts on broadcast TV). The result is ugly distortion that the stereo component is far more prone to than the mono one. Moreover, there's a lot of "extra" ra-

dio-frequency junk that any FM receiver must reject to deliver a clean music signal: the 38-kHz subcarrier, the 19-kHz pilot tone, and the 67-kHz SCA subcarrier, as well as various sum and difference tones that result from intermixing.

It's the Antenna, Stupid

When FM stereo was invented it was intended to deliver programming a maximum of about 25 miles, and with a clear line of sight between the transmitter and the receiver. Today, of course, we routinely expect to receive FM broadcasts from 40 or more miles away, over hill and dale, via the measly whip antennas on our moving-target cars or the tangled antenna wires that droop behind our stereo systems.

That we frequently obtain excellent results is really quite remarkable when you think about it. Nevertheless, whether your FM source is a \$49 table radio or a McIntosh MR7084, if you're like most Americans you're not even giving FM a fighting chance to deliver its best. The most sophisticated FM tuner in the world cannot yield decent per-

formance without adequate radio-frequency signal strength, and the strength of the signal you receive is a function of the quality and location of your antenna. Regardless of where you live, it's a virtual certainty that a better antenna will yield dramatically improved FM reception.

An antenna's signal strength depends on three variables: its distance from the transmitter (and geographical environment), its gain (signal-pulling power), and its elevation. Obviously, there's nothing you can do about the first factor, short of moving, but the second two are open to improvement.

The easiest way to improve reception is simply to raise your antenna. Every time you double the elevation of an FM antenna, you substantially

increase its potential gain. (You can investigate this with a handheld or headphone FM radio: Count how many stations you receive clearly on the ground floor of your house; then go up to the attic and repeat the experiment.) Unfortunately, a depressing majority of hi-fi systems employ only the folded-dipole wire "T" antenna that came packed with the receiver or tuner. And most of those are simply crumpled willy-nilly behind the stereo cabinet. If that describes your antenna "system," put down this magazine and go fix it immediately. Stretch the wires out as far as they'll extend, and tack them up on a wall (at least temporarily) as high as the download permits. If at all possible, orient the "T" (the crossbar should be horizontal) across

the line of sight toward the station(s) you want to receive. Make sure both connecting ends are firmly secured to the twin posts of your tuner or receiver's 300-ohm FM antenna input.

Better still, consider a roof antenna (a roof antenna can sometimes go in the attic with decent — though not optimal — results). A powerful, signal-pulling FM-specific antenna, mounted as high as practical and aimed at the station you want, is a miraculous thing. An excellent antenna and a crummy tuner can yield surprisingly good reception, but the best tuner in the world will sound lousy with a poor antenna. So for your first step toward better FM performance, do *not* automatically run down to the hi-fi salon to shop for a high-end tuner. Instead, check the Yel-

TUNING IN THE SPECS

Shopping for an FM performance upgrade can be tricky. You have no way of telling how big an improvement to expect — if any — until you get the new component home and try it in your location with your antenna system. So be sure to get a home trial.

Let me repeat, get the best antenna system you can manage *first*, and only then shop for new FM hardware. A separate tuner has the potential advantage of staying power: It can survive several upgrades of the basic hi-fi system, such as from two-channel stereo to multichannel surround sound. But if you also need an amplifier-and-features upgrade, there's almost certainly a receiver on the market that will meet your FM needs. Only a handful of the top component tuners demonstrably outperform the best receivers.

Either way, a careful reading and understanding of FM specs will help you narrow the playing field from the get-go. So let's proceed directly to the techie stuff. As for handy but irrelevant-to-performance features like the number of presets, auto-tuning seek/scan conveniences, and station-naming displays, only you can decide what's important.

IHF ("usable") sensitivity is the most often-quoted spec. It measures a tuner's ability to receive weak signals, but since it only quantifies how strong a signal is required to achieve a *mono* signal-to-noise ratio (S/N) of 30 dB — very noisy, indeed — it's fairly useless. The spec for *50-dB stereo quieting sensitivity* (the signal strength needed to achieve a 50-dB S/N in stereo) is

much more meaningful. Both sensitivity specs are expressed in decibels above 1 femtowatt (dBf), a tiny signal. Lower is theoretically better: Good tuners will fall in the 35- to 40-dBf range for 50-dB stereo quieting (10 to 15 dBf on the IHF mono-sensitivity spec). By no means take sensitivity as the be-all and end-all of FM performance. In the absence of careful complementary engineering, high sensitivity can actually engender distortion with strong signals.

A sensitive tuner with a true *local/distant switch* offers the best of both worlds. The local position should attenuate antenna signals by a factor of a hundred or so, preventing extremely strong signals from overloading the tuner's front end. Unfortunately, such models are rare; in many cases the "distant" switch just lowers the signal-strength threshold for the auto-tuning seek mechanism. Another unusual but valuable control is a *variable IF bandwidth switch*. In the wide IF (intermediate frequency) mode, the tuner is optimized for weak-signal reception, though at some penalty in distortion and multipath impact; the narrow setting improves those factors but limits fringe-signal receptivity. Such switches were common in the good old days, but in this age of digital tuning many tuners adjust IF bandwidth automatically — the microprocessor usually (but not always!) knows best.

Selectivity measurements describe a tuner's ability to discriminate among signals that are closely spaced on the FM dial — a

common situation in densely populated areas. *Alternate-channel selectivity* is a measure of how well a tuner discriminates between broadcasts that are two 0.2-MHz slots apart on the dial, such as 89.1 and 89.5 MHz (FM stations are not permitted to occupy frequencies less than 0.4 MHz apart in a single geographical area). But if you live midway between two cities and want to tune in a station at 90.9 MHz, say, from one of them while the other is sending an equally strong signal at 91.1 MHz (a directional antenna helps enormously here), *adjacent-channel selectivity* comes into play. In both cases selectivity, in decibels, states how well the tuner can suppress the unwanted signal; higher numbers are better. Tuners with wide/narrow IF modes may list an alternate-channel number for each position; narrow-mode selectivity will always be higher. An alternate-channel selectivity spec of 60 dB is fairly typical, and 75 dB would be very good. For the adjacent-channel figure (a much more difficult test that's rarely specified), 15 to 20 dB is typical, and 25 dB is topnotch.

Capture ratio is an important spec measuring the tuner's ability to reject the weaker of two signals on the same frequency, such as a reflection of the desired signal. Capture ratio has at least some bearing on multipath rejection; it's expressed in decibels, and lower numbers are better. Multipath reflections arrive at the antenna a few microseconds later than the original (because of their longer path) and a few decibels weaker (because the signal has bounced off buildings or geographical features). Multi-

low Pages under "Antenna" or "Radio Equipment," and talk to a few experts. A good one will fix you up with something like a multi-element "yagi" on a mast towering over your roof, with an indoor-controlled rotor, of course, for pinpoint aiming.

Okay, so your lifestyle, rental contract, condo agreement, zoning regulations, or budget won't accommodate an outdoor antenna. What to do? There are a number of indoor FM antennas on the market from Terk, Parsec, Radio Shack, Recoton, and others. Many of these antennas are compact, RF-amplified tabletop models, usually optimized for urban environments. That is, they excel at discriminating among closely spaced, strong stations but offer only modest help at

path is the single thorniest problem in FM reception, usually appearing as a hashy, dynamically expanding/collapsing stereo soundstage or excruciating harmonic distortion. A capture-ratio spec of around 1.5 to 2 dB is typical, and 1.0 dB is top-shelf. *AM suppression* is another spec that reflects (pun intended) anti-multipath ability: 60 dB or higher is very good.

Among the specs for a tuner's audio quality is the familiar *frequency response*: 20 Hz to 15 kHz ± 0.5 dB is typical (remember that 15 kHz is FM's brick-wall upper limit). *Total harmonic distortion (THD)* is usually given for a high antenna-signal level, 65 dBf, with separate specs for mono and stereo. Acceptable THD specs might be 0.15% and 0.25%, respectively — high by CD standards but well within hi-fi limits. Distortion is usually specified for a single frequency, 1 kHz; higher-frequency measurements are informative but rarely listed.

Signal-to-noise ratio (S/N) expresses the tuner's best-case suppression of noise in terms of antenna signal strength. It is specified in decibels below the signal level, separately for mono and stereo. Specs of 80 dB in mono and 75 dB in stereo are typical for fine tuners.

Finally, *channel separation* is a measure of how well the tuner keeps left-channel signals from leaking to the right side, and vice versa — again, usually stated with best-case antenna-signal strength. A figure of 55 dB or more would be very good, but in the real world anything above 25 dB pretty much delivers a full stereo effect. — D.K.

TUNING OUT THE NOISE

Besides a better antenna and a good tuner or receiver, you might examine your indoor environment for FM pitfalls — most notably sources of radio-frequency interference (RFI) that can inject noise into an otherwise clean signal. A modern home is replete with electronic devices that behave like miniature radio transmitters. Computers, video monitors, and video-game consoles are among the worst offenders. Of course, cordless phones, wireless intercoms, and anything else that uses the radio spectrum can also be serious polluters. Most of these problem sources affect AM radio much more seriously, but they sometimes trouble FM as well.

The obvious cure is to turn these devices off or refrain from using them while listening to FM. If you suspect an RFI source, use a process of elimination to identify the

pulling in weak or distant ones. Yet in many a city or suburb the best of these antennas yield very real gains in the number of listenable stations received. (Beware of the 1950's-spaceship-looking indoor TV/FM antennas occasionally found in old-time hardware stores: These are essentially fancy "rabbit ears," functionally much the same as a wire dipole.)

There are also a few compromise solutions, larger indoor FM antennas that can be installed in a corner or (possibly) a closet. The best of these, though not the equal of a good rooftop antenna, can offer a worthwhile boost in signal-pulling ability.

Separate but Equal?

With your antenna needs in hand (as far as practical), you might be ready to shop for a new FM component. Should you look for a separate tuner or for a receiver? Both. The separate tuner arose in the tube era, when the electromagnetic fields from tube power amps created interference problems and, more seriously, the heat generated by tubes often caused tuning elements to drift gradually "off-station." Today, with solid-state amps and tuners and digital tuning, electromagnetic fields and heat have ceased to be issues. But the separate tuner persists, mostly as a marketing phenomenon. Many manufacturers reserve their best FM designs for component tuners, since these naturally inhabit the upper reaches of their model lines.

offender. Unplug all the suspects, and repower them one by one until the culprit reveals itself. Powering an RFI-emitting device from a different AC circuit, which helps isolate its ground from that of the tuner and amplifier, can sometimes cure or mitigate the problem, but usually you'll just have to leave the problem device turned off (or even unplugged) while you're listening. RFI/ant surge AC filters for your audio gear might also help eliminate noise.

If your RFI problem comes from the outside world — a local CB or ham radio operator or commercial communications transmissions — your options are fewer. A polite inquiry to the neighboring source to check that the transmitter is operating within FCC guidelines might help, and a severe case may call for a complaint to the FCC. — D.K.

That's not to say that you can't find a receiver with a good FM tuner. On the contrary, many of today's receivers deliver superb FM, with exceptional sensitivity for pulling in weak signals and outstanding quieting and freedom from distortion for top sound quality with adequate signal strength. So don't automatically assume that you have to buy an outboard tuner to get fine FM performance.

Nevertheless, if state-of-the-art FM is what you seek, a separate tuner is where you'll find it. Aside from top-of-the-heap specs (see "Tuning in the Specs," at left), you may also encounter certain performance features like wide/narrow IF switching that are tough to find in a receiver.

Reach out and hear someone! Today's FM dial offers more variety than ever before. College stations nationwide deliver vast libraries of little-known music, National Public Radio takes the high road (usually), and the narrowly targeted commercial broadcasters offer something for almost everyone (Boston, for example, now has a station devoted to "hits of the Seventies"). Better yet, most FM stations play only CD's, and the CD revolution has encouraged a broad reworking of studio and broadcast facilities, making FM quality significantly higher than it was just a decade ago. So tune up, and tune in today. □



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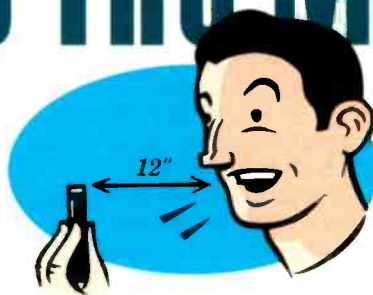
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Don't Blow Into The Mike!



THE BASICS OF MAKING YOUR OWN LIVE RECORDINGS

Strangely enough, it has been the popularity of video that's introduced a lot of people to the mysteries of live audio recording. There has always been a hardy band of audio enthusiasts who enjoyed making original tapes, either of the neighborhood jazz band or their own voices, but most owners of audio equipment have been content to listen to professionally recorded material. Then along came the camcorder, which, among other things, recorded sound. All of a sudden, millions of camcorder owners had to deal with microphones and their quirks.

Unfortunately, even though many camcorders offer such amenities as hi-fi soundtracks and stereo microphones, the recordings made with them often leave a lot to be desired. For one thing, the best place to put the lens to catch the action is rarely the best place for the mike to pick up the sound of that action. For another, camcorder manuals rarely go into much — or any — detail about audio recording; even the manuals supplied with cassette decks offer little in the way of useful information on live recording.

The microphones built into cam-

recorders and some boomboxes are, of course, very convenient, and there are plenty of situations in which they will produce an adequate recording. But when it comes to making a serious recording — especially one involving music — you should consider bypassing the built-in microphone and using an external mike. Not all camcorders or boomboxes have jacks that let you connect outboard equipment, and only a few of today's cassette decks provide microphone inputs, so look for those features before you buy.

The equipment and techniques for live recording tend to be pretty much the same whether the recording is audio only or intended to accompany video images. But making good recordings is a skill that takes a lot of rehearsal and experience. Don't be disappointed if your first attempts fall short of the sound quality you are used to from movie soundtracks or CD's.

The first thing to consider is where the recording is to be made, as that will affect your techniques profoundly. Every location has its own acoustic character, from the almost total "dryness" of the outdoors on a still day to the reverberance of a church or con-

cert hall. Depending on your objectives and the subject of your recording, it may be appropriate to capture some or all of the ambient sound, or it may not. Either way, both the mike you choose and where you put it will determine how things sound.

As a rule, the closer you place a microphone to your principal subject, the less ambient sound you will pick up in the recording, mostly because the direct sound will overpower the reverberant sound. But the farther you place the mike from the main sound source, the more you will have to turn up its level — which will also increase the level of ambient sound in the recording.

If you're recording outdoors, placing the microphone some distance from the main sound source won't pick up the sort of echoes you'd get in an enclosed space, but it will capture the sound of airplanes flying overhead, trucks barreling by, or kids chattering in the background. On the other hand, in a relatively tranquil setting you can achieve a pleasing atmospheric effect by intentionally placing the mike away from the primary sound source and cranking up the recording level to

BY IAN G. MASTERS

Don't Blow Into The Mike

exaggerate bird songs, the rustle of leaves, and other sounds of nature.

Coping with Wind

Using microphones in the great outdoors has one distinctive problem: wind. A microphone diaphragm has no way of knowing which pressure variations are sound and which are not — it reacts to them indiscriminately. Even a light breeze can create enough disruption to obliterate what you're trying to record. The wind filter on many camcorders gets rid of some wind noise by rolling off the low frequencies, and placing a "pop filter" (a hollowed-out piece of foam) over the microphone's



head may also do some good. But the only real way to avoid the effects of wind is to make sure it doesn't reach the mike's diaphragm. Try blocking it with a board or a cushion — or your body, if you're using a camcorder with a built-in mike. If there's no practical way to block the wind, look for another location or wait (and pray) for the wind to die down. When you're recording a once-in-a-lifetime event over which you have no control, you just have to grin and bear it, but do try to get the microphone as close to your subject as possible.

If you can't get close to the subject, your best bet is to use a microphone that has a directional pickup pattern (see "Inside the Shell," facing page) and aim its most sensitive portion toward the sound source. For audio-only recordings, it's okay to aim the microphone from one side of the main subject instead of directly in front if that's what it takes to minimize ambient noise. When you're using a camcorder's built-in mike, though, your aiming options are limited.

Reverberant Spaces

If you're recording music that's being performed in a large space, it's usually best to place the mike(s) at some distance from the musicians to

capture the room's natural ambience. If the perspective is too close to the instruments, the recording will sound overly dry and unnatural.

But if you're recording a speech in the same hall, you should place the microphone as close to the person speaking as possible. That might mean sitting right under the apron of a stage or placing the microphone (or recorder if the mike's built in) right on the lectern. Sitting halfway back in the hall and aiming the mike toward the subject will almost always produce a muddled recording in which speech intelligibility is overwhelmed by room reverberation and echoes. If you can't get close to the subject, perhaps you can record the sound directly from a public-address loudspeaker.

In smaller rooms, you should aim to capture as little of the natural ambience as possible, as it tends to make recordings sound "boxy." Ways to achieve this include using directional microphones, placing mikes close to the subject, and using sound-absorbing materials to deaden the room.

Speak into the Mike

For voice recording, try placing the microphone slightly off to one side so that the subject is not speaking or singing directly into it. That will help reduce the impact of the pops, or verbal explosions, that can occur when certain sounds, like P's and B's, are uttered. Another way to help control voice pops is to slip a foam pop filter over the pickup end of the mike.

Voice intelligibility can often be further enhanced by placing the mike very close to the speaker or singer — provided the mike has an omnidirectional pickup pattern (see "Inside the Shell"). If it has a directional pickup pattern — meaning that it's less sensitive to the sides, for example — you'll want to pull it back at least a couple of feet to allow for the "proximity ef-



fect": As the sound source gets closer, such a mike's sensitivity to lower frequencies begins to rise. In other words, putting a directional mike too close to the subject will result in a boomy recording.

While it's sometimes desirable to hold a microphone in your hand while recording, that often leads to the pickup of noises from the movements you make. One way to avoid such distractions is to use a lapel mike that clips onto the speaker's clothing. Or you can support the microphone with a stand or boom. Some mikes come with a table stand, which may be all you need, but if you intend to use a detachable stand or some other arrangement, such as a gooseneck mount on a lectern, just make sure your mike is compatible with the mounting scheme. In vibration-prone environments, it's also a good idea to place the microphone on a small pillow or a folded towel to help absorb shocks.

Recording Live Music

The live recordings most of us do are of spoken voice — a lecture or a child's first words — but there may come a time when you want to record live music. It's a more involved process, and good results are harder to achieve. The best advice I can give is to keep things simple. Some of the best professional recordings take a minimalist approach, on the premise that the musicians and conductors have already balanced the music, so as long as you put the mike(s) in the right place(s) you'll pick up that balance.

That approach works fine when you're recording the local jazz quartet at the church hall — as long as you're able to put the mike in the appropriate spot. But if you're recording your brother-in-law's folk group in your living room, there may not be a "natural" spot for the mike. To achieve the proper balance, you'll have to move the musicians around the mike until things sound right. Start with the soft-

INSIDE THE SHELL

The job of a microphone is to sense the variations in air pressure that make up the original sound and to turn them into corresponding changes in electrical voltage. In the early days, tape recorders were usually sold with cheap crystal or ceramic microphones, which didn't perform very well. Then along came the "dynamic" microphone — an inexpensive yet high-performance device that's still widely used. In a dynamic mike, a diaphragm is attached to a fine coil of wire that moves back and forth in the field of a strong permanent magnet, exactly like a moving-coil cartridge but in reverse. Dynamic mikes tend to be fairly bulky, though, which makes them less desirable where size and weight are concerns.

Pros often use condenser microphones, in which a metal (or metal-coated) diaphragm and a fixed plate close behind

it form the elements of a variable capacitor. As sound moves the diaphragm, the capacitance changes in step with the changes in distance

between the plates. But condenser mikes are very expensive, and they require an externally generated polarizing voltage for operation.

Most of the size and performance benefits of the condenser microphone can be obtained from its cheaper offspring, the electret microphone. In this case the capacitor plate has a fixed charge, so an external power source is unnecessary. Electrets can be extremely small with little sacrifice in quality, which is why they are commonly used for built-in applications. Virtually all consumer microphones are electret or dynamic designs.

One of the most important characteristics of a microphone is its directional pattern, its relative sensitivity to sounds coming from different directions. An omnidirectional mike is equally sensitive to sounds from all angles, while the rarer bidirectional (or dipolar) mike has a figure-eight pattern, sensitive to sounds coming from the front and back but very dead to the

sides. A microphone that is significantly more sensitive in one direction than the others is sometimes called "unidirectional" but is more often referred to as "cardioid," because its pickup pattern (looking from above) is roughly heart-shaped. More extreme versions are sometimes called "supercardioid" or "hypercardioid."

Two specialty microphones are increasingly common. One is the stereo microphone, which is really two separate devices in a single case. The other type is the lapel microphone, which is almost always of the electret variety because unobtrusiveness is one of its major virtues. Lapel mikes are usually omnidirectional, but some have heightened treble sensitivity to compensate for a wearer's tendency to talk away from the mike.

If a microphone is built into a piece of gear, there's little fear that it will be incompatible with the rest of the equipment. But microphones are often separate components, so compatibility can be an issue. Most home tape recorders, if they have microphone inputs at all, use quarter-inch phone jacks, usually one for each microphone. Portable equipment, including camcorders, usually economizes on space by using minijacks.

Full-size phone jacks or minijacks are attached to "unbalanced" cables, in which the signal is carried by a single conductor connected to the tip of the microphone plug. This "hot" lead is surrounded by a woven wire shield that both blocks noise caused by nearby electrical devices *and* serves as the ground connection. Unbalanced lines are adequate for short runs; for extremely long cable runs — say, hundreds of feet — balanced cables are used.

These have two hot conductors to carry the signal, surrounded by a separate grounded shield. Few consumer recording or mixing devices, however, can deal with a balanced signal without the use of an external transformer.

— I.G.M.

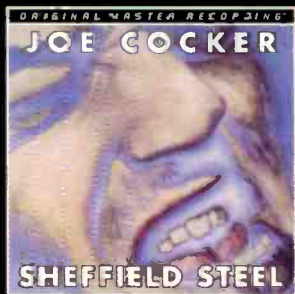
est sound, and then position the other instruments to achieve a natural blend. For example, a string bass should probably be closer to the mike than a vocalist or an acoustic guitar. You may be able to achieve a similar result by placing extra-loud instruments in the mike's dead spot.

For this sort of single-microphone recording session, you don't really need any peripheral equipment as long as your recorder has a microphone input. All you need to do is keep your eyes on the meters and your hands on the input-level controls. If your recorder lacks a mike input, however, you'll need a microphone preamp to boost the signal to a level the recorder can work with. While you could go out and buy a dedicated mike preamp, it's far more practical to pick up a simple mike mixer that has one built in. It's usually easy to control and monitor microphone levels with a mixer, and you can blend the outputs of several mikes — or mikes and other sources. (Just beware: Adding more microphones seriously complicates the recording process.) Some mixers even have "pan pots" that let you "place" instruments in the sound stage — for example, the vocals from Mike 1 in the center, the guitar from Mike 2 at right of center, and the guitar from Mike 3 at left.

One of the hardest things to master in making live recordings is setting proper levels (unless your machine has an automatic gain-control circuit that does it for you . . . but that rarely results in a really satisfactory recording). When we make tapes of broadcasts or CD's, they have already been processed, so it's usually only necessary to set the level once; in live recording, you have to adjust it on the fly. Sometimes the music is self-regulating — if you get the level of a symphony orchestra's fortissimo passages right, for instance, everything else should fall into place — but usually you have to "ride gain" from moment to moment to keep the level meters out of the red (distortion) area. The best advice I can give here is that adjustments should be subtle; sudden changes are noticeable and annoying.

Every recording and every piece of recording equipment is different, so learning to make good tapes requires a lot of trial and error. But when you get the knack, it's hard to beat the satisfaction of listening to live recordings you have made yourself. □

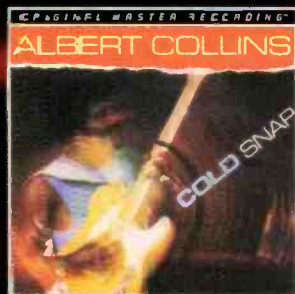
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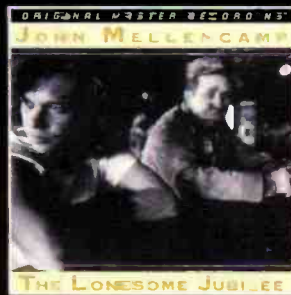
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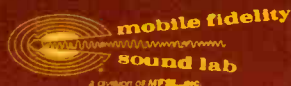
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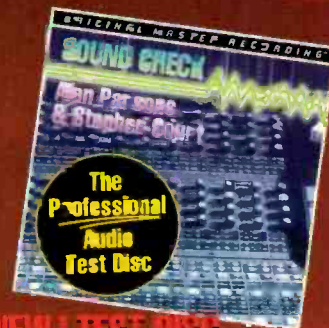
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BEST OF THE MONTH REVIEWS

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Butch Hancock's Musical Metaphysics

Butch Hancock's poetic songwriting and dry husk of a whine are so similar to that of an ultra-famous troubadour from Hibbing, Minnesota, that it would be easy to say his extraordinary new album, "Eats Away the Night," is the best record Bob Dylan never made. But Hancock is more than just a Lubbock, Texas-style Dylan imitator. And on this, his first fully realized studio effort after seven discs he produced for his own label, he has finally delivered a record both brilliant and cohesive.

That's an accomplishment he's only come close to in the past, with such songs as *Boxcars* and *If I Were a Bluebird*, both reprised here in new versions. *Boxcars* comes across as slower, bluesier, and creepier than even Joe Ely's better-known rendition, with Hancock rolling the melody off the bottom of his register and a menacing electric guitar insinuating that trouble is surely brewing tonight. And by using Lucinda Williams's crack band (guitarist Gurf Morlix, bassist Dr. John Ciambotti, drummer Donald Lindley),

Hancock has added an instrumental subtext to his music — a torpedo of a snare drum and a lurching guitar drive on the evocative *Moanin' of the Midnight Train*, for example — that he's never had before. Under Morlix's direction, Hancock's music is finally as stirring and metaphysical as his lyrics.

And what lyrics those are, from mournful sketches of love and loss (*One Kiss*) to a biting portrait of a twisted lover ("She had a smile like Christmas mornin' / She had a heart like Halloween") on the hard-driving *Junkyard in the Sun*. Whether writing detailed story songs or simple descriptive passages, Hancock knows how to get your attention and keep it, as in the opening of *Welcome to the Real World Kid*: "She was a screamer and a moaner / I was a dreamer and a loner / I don't know how we got together / But we did."

Watch for "Eats Away the Night" to show up on lots of critics' Best of the Year lists later on. In the meantime, listen for it to set up road blocks in your brain.

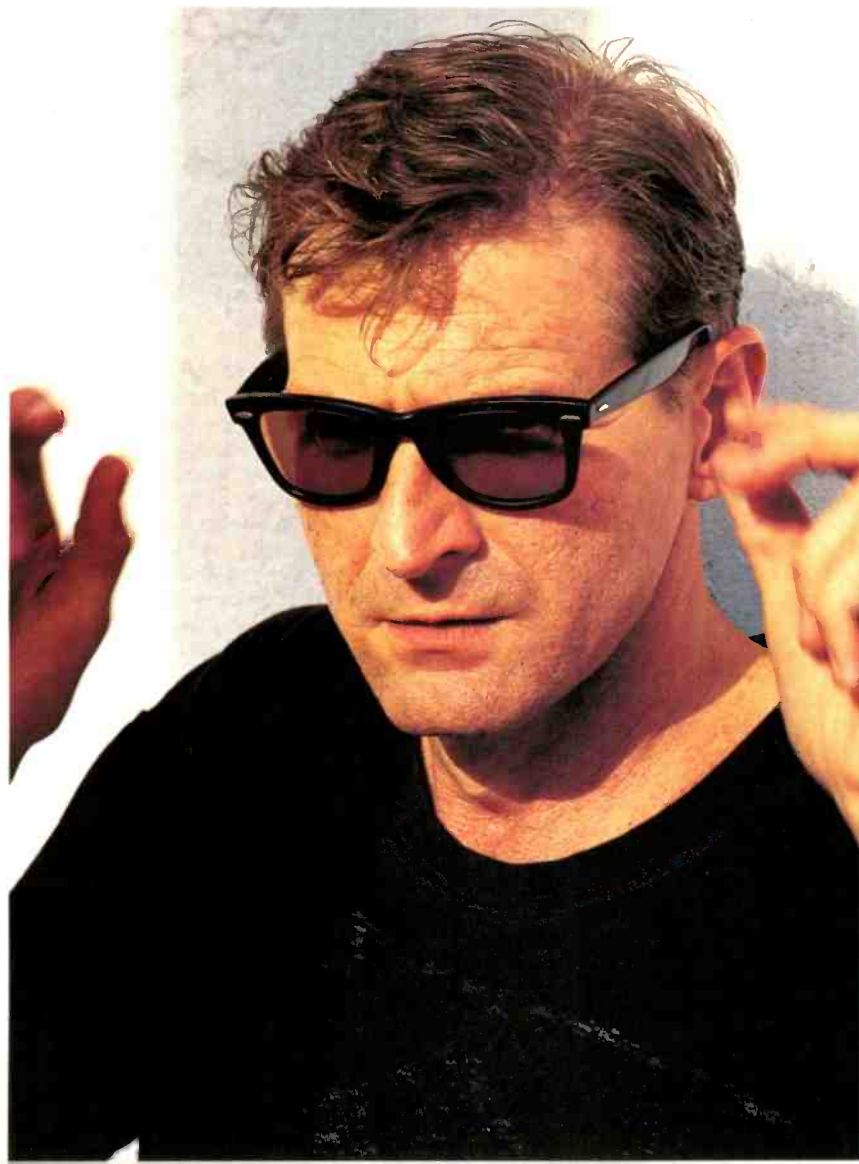
Alanna Nash

BUTCH HANCOCK *Eats Away the Night*

To Each His Own; Moanin' of the Midnight Train; Eileen; One Kiss; Pumpkin eater; If You Were a Bluebird; Junkyard in the Sun; Boxcars; Baby Be Mine; Welcome to the Real World Kid; Eats Away the Night
SUGAR HILL 1048 (51 min)

Rostropovich's Eloquent Bach Cello Suites

It is surely a major event when the premier cellist of our time makes his first complete recording of the *King Lear* of his instrument, Bach's six suites for unaccompanied cello. Mstislav Rostropovich, who had previously recorded only two of the suites, very early in his career, has finally made an assault on the



FABIO NOSOTTI/SUGAR HILL

BEST OF THE MONTH REVIEWS

whole set, and the result is a display of dazzling musical technique and profound sensitivity. He has clearly thought a great deal about these pieces, and he speaks through them with great clarity and enormous eloquence.

Indeed, the eloquence is at moments *too* enormous. The sarabande of the Fifth Suite, for example, is very slow, and so garnished with soulful harmonics and anguished breathing that it begins to sound more like a gloomy rumination by Shostakovich than Bach. But the interpretations hang together with monumental integrity, and in the end the occasional excesses only add to the noble individualism of this performance. I found that after I had lived with this recording for a few days, I began to hear it even in silence.

The magnificent recording was made at



Cellist Mstislav Rostropovich

the Cathedral of Ste. Madeleine in the village of Vezeley in Burgundy, France. At a recent press conference in New York, Rostropovich revealed that the cathedral's rich, sonorous acoustic was not the only attraction — a nearby Michelin three-star restaurant also exerted a pull on him. If a relatively small investment in haute cui-

sine was required to create the conditions for musicmaking on this order, who would begrudge the maestro? *Jamie James*

BACH: Suites for Unaccompanied Cello
Mstislav Rostropovich
EMI 55363 (two CD's, 148 min)

Abbey Lincoln: A Singer In A Class By Herself

Hollywood slipped her into a tight red dress that once belonged to Marilyn Monroe and tried to market her as a sexpot, but Abbey Lincoln would have none of it. When the low-budget non-Hollywood film *Nothing But a Man* finally showed off her considerable acting talent, casting directors did not read the reviews. But as a singer Lincoln is having the last laugh. In fact, judging from her brilliant new album, "A Turtle's Dream," she has practically reinvented herself.

Of course, Lincoln was always a singer, going back to her Riverside days in the late Fifties, when she gave a personal twist to standard ballad material, and later, when she lent a voice of anger to Max Roach's *Freedom Suite*. She has always approached vocals in an engaging, personal way, shaping the melody in the manner of a jazz instrumentalist. It wasn't the voice that made us pay attention to Lincoln's songs — it was the delivery. What makes her different today is that she is on her own, singing better than ever and writing her own material with a poet's touch. Her lyrics are not of the June-moon variety, nor do they express the bitterness one might expect to hear from someone who has faced so much prejudice on so many fronts. Rather, they are tender and loving, skillfully put together and sung with the craft of a true chanteuse.

"A Turtle's Dream" is Lincoln's most fulfilling release. Of the CD's eleven selections, nine are her own compositions. The inclusion of *Nature Boy* — the Eden Ahbez song that Nat King Cole turned into a hit almost a half century ago — is not surprising, for it reflects the lyrical quality that characterizes Lincoln's own writing. The other nonoriginal is sung in French, or at least a reasonable facsimile

VERVE RECORDS



Lincoln: reinvented

thereof. Throughout this set, Lincoln enjoys appropriately tasteful accompaniments by some of the finest musicians in any genre, including Roy Hargrove, Pat Metheny, Kenny Barron, and bassists Charlie Haden and Christian McBride.

After all these years, Lincoln has obviously hit her stride, and it is a pleasure to follow her as she navigates, with so much sophistication, toward that special place to which performers ascend when their artistry takes them beyond the crass neon flutter of show business. She may have spent much of her life in the jazz world, but it would be a mistake to pigeonhole her as just "a jazz singer." The truth is, Abbey Lincoln is Abbey Lincoln — just as Piaf was Piaf, Bessie was Bessie, and Lenya was Lenya. *Chris Albertson*

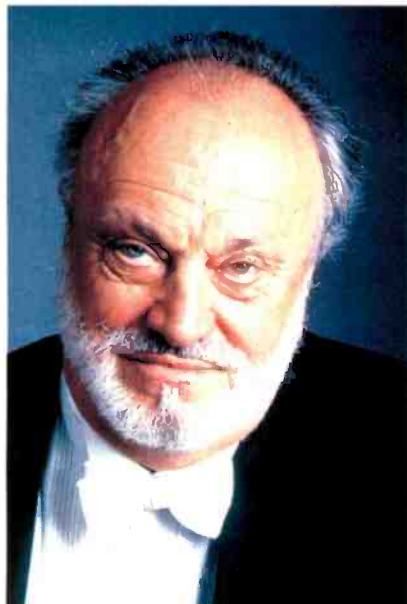
ABBEY LINCOLN **A Turtle's Dream**

Throw It Away: A Turtle's Dream; Down Here Below: Nature Boy; Avec le Temps; Should've Been; My Love Is You; Storywise; Hey, Lordy Mama; Not to Worry; Being Me
VERVE 527 382 (69 min)

Clear, Direct Mahler From Masur

Kurt Masur's new Teldec recording of Mahler's Ninth Symphony with the New York Philharmonic is a powerful antidote to the sort of indulgence, sentimentalizing, and longueurs that can turn a work of exceptional urgency and directness of expression into a mystical ceremony. Masur obviously has no patience with such an approach. His extraordinarily clarifying performance, which happens to be another persuasive argument for the artistic advantages of recording in concert, is really *live* in every sense. Because it is free of bloat, it fits on a single disc, the same as the treasurable Ninths of Rafael Kubelik, John Barbiroli, Michael Gielen, and Václav Neumann, all of whom, like Masur, were more concerned with giving the music life to speak in its own voice than with putting their own gaudy imprints on it. Masur, however, has considerable advantages over those illustrious predecessors in both the stunning virtuosity of his orchestra and the superbly defined recorded sound, which brings every detail into focus without any hint of gratuitous spotlighting.

That virtuosity is formidable indeed, not as an end in itself, but in fulfillment



Conductor Kurt Masur

CHRISTIAN STENGER/TELDEC

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- **PENETRATION! THE BEST OF THE PYRAMIDS.** SUNDAZED 11023. Long out-of-print album by the pioneering surf combo, with some additional singles and previously unreleased tracks.

- **LITTLE JIMMY SCOTT: All Over Again.** SAVOY JAZZ 0263. A combination of two LP's, from 1955 and 1960, by the recently rediscovered, eerie-voiced jazz and R&B stylist.

CLASSICAL

- **BEETHOVEN: Violin Concerto.** Heifetz, Boston Symphony, Munch.

- **BRAHMS: Violin Concerto.** Heifetz; Chicago Symphony, Reiner. RCA VICTOR 61742. Heifetz displays "flawless control and intonational purity" in this well-made 1955 stereo recording (October 1971 review of the cassette reissue).

- **RIMSKY-KORSAKOV: Antar, Symphonic Suite.** IPPOLITOV-IVANOV: *Caucasian Sketches.* Utah Symphony, Abravanel. VANGUARD SVC-8. A Super Bit Mapping transfer of 1967 recordings from the University of Utah Music Hall.

- **STRAVINSKY: Petrushka.** New York Philharmonic, Boulez. *The Rite of Spring.* Cleveland Orchestra, Boulez. SONY 64109. These 1969 and 1972 Pierre Boulez recordings were widely acclaimed for their revelatory clarity and precision; some critics still consider them touchstones.

- **MCCORMACK AND KREISLER IN RECITAL.** NIMBUS 7868. The legendary Irish tenor John McCormack and the equally legendary Viennese violinist Fritz Kreisler in solo and duet performances of popular songs, art songs, and violin encores recorded between 1913 and 1924.

of Mahler's formidable demands. How beautifully secondary motifs and thematic fragments make their points as the music sweeps to its resolution! The outer movements respire in long breaths that support the great themes; the inner ones crackle with sardonic humor, ranging from the bumptious to the demonic, set off in prodigies of wind and brass playing. The slight broadening out that Masur allows for the great final adagio is so subtle that one hardly notices, but one does feel the compassion locked in the opening phrase, and there is no misfire when the clouds roll back for the great catharsis just past the middle of the movement. Everything before has steadily and soundly built toward that moment, and everything in the

remaining 10 minutes is similarly convincing in its release.

There is no sugar-coating here, no ritual, no ceremonial, but neither is the performance an effort at "debunking." It is simply very committed, very intense, and very unself-conscious musicmaking in which every participant seems to have surpassed himself. Neither the New York Philharmonic nor the Mahler Ninth (composed, incidentally, when Mahler himself was the Philharmonic's conductor) has ever sounded better in a recording.

Richard Freed

- **MAHLER: Symphony No. 9** New York Philharmonic, Masur cond. TELDEC 90882 (79 min)

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POPULAR MUSIC



NEW RECORDINGS REVIEWED
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 RON GIVENS, ROY HEMMING,
 ALANNA NASH,
 PARKE PUTERBAUGH, AND
 STEVE SIMELS

THE BAND

Live at Watkins Glen
 CAPITOL 31742 (45 min)

Performance: Perfection
 Recording: Good, considering

What a Band, what a Band, what a mighty fine Band! This is a loose, exuberant recording made before an intimate crowd of 600,000 at the Watkins Glen "Summer Jam" on July 28, 1973, where the Band performed during a *de rigueur* upstate New York rock-festival thunderstorm. The CD was drawn from the "most complete available tape" of the event, which makes me regret the loss of the rest of the set, as the 45 minutes here are marvelous indeed.

At the time of Watkins Glen, the Band was coming out of a period of hibernation, having laid off the road while working on their covers album, "Moondog Matinee." They sound feisty and full of sass on this hot July day, anteing up a juking set of jams, cover tunes, a new original (the fatalistic *Endless Highway*, which prefigured their disbanding), and some old favorites. The covers are revelatory, from Rick Danko's soulful reading of the Four Tops' *Loving You Is Sweeter Than Ever* to the group's high-spirited stab at Chuck Berry's *Back to Memphis* to a shaggy ramble through Bob Dylan's salty "Basement Tapes"-era tossoff, *Don't Ya Tell Henry*. The group chemistry is amazing: Robbie Robertson's steely, jabbing guitar, Garth Hudson's ornate keyboard sorcery, Levon

Helm's joyfully musical drum thumping, Danko's bopping bass lines, Richard Manuel's rich piano chording. This previously lost concert seems, in hindsight, to have been a high point for the Band, whose playing is informed with both a casual humor and a reckless energy lacking in "The Last Waltz." This is how the Band should be remembered. P.P.

MARSHALL CHAPMAN

It's about time . . .

MARGARITAVILLE/ISLAND 535 011
 (64 min)

Performance: Suitable jailhouse rock
 Recording: Good

Tall girl Marshall Chapman, that most underrated of country-rockers, is back, four years after the release of "Inside Job." "It's about time . . ." is a charming live recording that finds her performing at the request of the matrons and inmates of a Tennessee women's prison, and it's hard to tell who had the better time — the incarcerated or Chapman. Backed by her blazing blues-and-boogie band, the Love Slaves, Chapman moves through material both proven (*Real Smart Man*, *Bad Debt*, *Betty's Bein' Bad*) and new (*Good-bye Forever*).

Unlike most live albums, this one shows the singer to be just as entertaining in the between-song prattle as she is in song, drawing on in her Spartanburg, South Carolina, accent about the proper behavior of ladies, about her appalling taste in boy friends, and about the women on her mama's side ("She's trash, but you love her. She's Alabama bad"). Irresistible. A.N.

TERENCE TRENT D'ARBY

TTD's Vibrator

WORK/SONY 67070 (66 min)

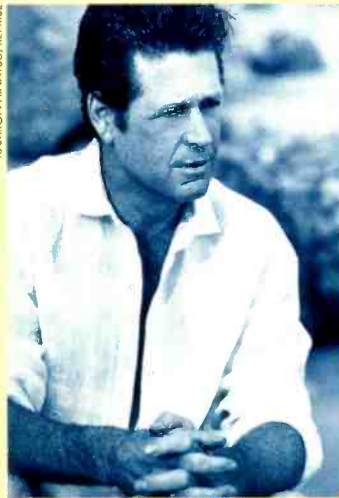
Performance: Disappointing
 Recording: Dense

Basically, Terence Trent D'Arby got gypped. In his first two albums ("Introducing the Hardline" and "Neither Fish Nor Flesh"), he developed a remarkably original take on classic soul, heavily cut with spirituality and psychedelia. Then Lenny Kravitz came along with a watered-down version of the same thing, only he went on to stardom while TTD was exiled to cult-hero land.

Since then D'Arby's gotten slightly less eclectic and gone out of his way to be listener-friendly. While 1993's "Symphony or Damn" worked fine on those terms, "TTD's Vibrator" marks his first real misstep. His usual flair for hooks and melodies is in short supply this time, his ballads are pleas-

BACK TO THE BEACH

KAWRON HINATA/S/REPRISE



You may have heard that hero record producer Don Was has branched into film, directing *I Just Wasn't Made for These Times*, a documentary on the life and work of famously troubled head Beach Boy Brian Wilson. But what you may not have heard is the just-released soundtrack album (MCA/KA:RAM:Bo:LA:Ge 21923), as close to a revelation as anything that's crossed my desk this decade. The format is simple: eleven well-chosen Wilson songs (mostly post-surf stuff) performed live, with the star, in astonishingly good voice, backed by a crack band featuring Was, Benmont Tench, Jim Keltner, and (on a glorious *Do It Again*) daughters Carnie and Wendy. The results are almost rapturously beautiful, and though the film will be shown on PBS later this year, you need to hear the album now. Frankly, it confirms what many of us have long suspected — that Wilson is a major American artist, a pop composer on a par with Ellington or even Gershwin. S.S.

JOHN SCARPATI/ISLAND



Country-rocker Marshall Chapman



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ant where they used to be mesmerizing, and *Resurrection* is just a cosmic mess. The constant blurring of sexual/spiritual themes would raise more eyebrows if Prince hadn't already done it. Still, D'Arby's singing voice remains one of the strongest in modern R&B, almost strong enough to make you ignore such lyrical gaffes as "Have you had your death today?" and "Her bosom contains my sweet alibi." When he shakes some metal/funk action on the lusty *Supermodel Sandwich* and *Read My Lips (I Dig Your Scene)*, the results are dazzling. But "Vibrator" largely amounts to a relish of what he's done better before. *Brett Milano*

DURAN DURAN

Thank You

CAPITOL 29419 (48 min)

Performance: No, thank you

Recording: Grates

Cover albums are to rock-and-roll what Christmas albums are to country music, good excuses to keep the product rolling when inspiration is in short supply. In the case of Duran Duran, a band that isn't exactly blessed with inspired musicianship or interesting personalities, who cares what their interpretation of this or that "classic" might sound like? In the old days you could always write off an album like "Thank You" as a waste of vinyl. I'm uncertain what the CD equivalent of such a putdown would be — a waste of aluminum foil sandwiched in plastic? — but it certainly applies to this slight and misconceived release, which jumbles sources ranging from Bob Dylan and the Doors to funk and hip-hop.

"Thank You" opens with *White Lines*, which solves the problem of how English white boys can pull off a ghetto-bred anti-coke rap by recruiting the original artists (Grandmaster Flash and Melle Mel) to do most of the work. Duran Duran's unassisted version of Public Enemy's *911 Is a Joke*, however, is a joke: what do these Londoners know from 911 or hip-hop culture drawn from the belly of the beast? They do no better by Sly and the Family Stone's *Wanna Take You Higher* or the Temptations' *Ball of Confusion*, their soul moves coming off about as funky as a package of Twinkies. And just to prove their lack of depth, what do they cover by Dylan — an early message song? some overlooked gem? Try *Lay Lady Lay*. Feh! *P.P.*

MARIANNE FAITHFULL

A Secret Life

ISLAND 524 096 (35 min)

Performance: Obsessive

Recording: Good

So, Bertolt Brecht goes into this bar in Berlin and says, "Where can I get some damned fine coffee?" And this weathered blonde with a husky voice stubs out her cigarette and says, "I have two tickets to Twin Peaks. Let us lose ourselves among the giant redwoods."

That is not the way Marianne Faithfull's "A Secret Life" came into being. But if the scenario were true, she might have produced an album very much like this one. It oozes with so much romanticism, fatalism, and brooding that you'd almost swear she



Harvey: dangerous

was singing in German. And the lyrics, many of which she wrote or co-wrote, are gently prodded along by the velvety smooth, synth-drenched music of Angelo Badalamenti, who composed the deliriously melodramatic music for the TV series *Twin Peaks*.

The combination is rapturous: quiet *Sturm* meets high *Drang*. Faithfull seems to be tumbling, freefall in slo-mo, through a series of troubled-love vignettes — about a cheating wife, a tortured loner, a betrayed woman — and yet the music is pillowy soft, wrapped in real or synth strings and occasionally spiced with Seventies TV-movie guitar or an actual backbeat. Call it mood music for a dream gone sour.

The apotheosis comes with *The Stars Line Up*, in which Faithfull puts her bloody heart on her threadbare sleeve: "Let's write our names / High up inside the sky." Badalamenti's music ebbs and flows, lapsing into sentimentality and then withdrawing, gushing into religiosity at the climax — always managing, somehow, to be understated and over the top at the same time.

Clearly, Faithfull and Badalamenti are a marriage made in romance heaven. May they soon find themselves together again, all alone in the dark. *R.G.*

P J HARVEY

To Bring You My Love

ISLAND 524 085 (43 min)

Performance: Riveting

Recording: Audio verité

Polly Jean Harvey is a new kind of female rocker: tougher than nails, but without those cypocatt affectations that make so many femme rockers indistinguishable from their leather-and-studs male counterparts. The hardness in Harvey's music isn't a superficial pose but an interior

howl. What some might call the "grain" in her voice is more like a fissure — a deep, raw, and open wound. "To Bring You My Love" is a deliberately unpretty record. The voice wavers off-pitch, the bass distorts, guitars muddle around hitting wrong notes that strike the right emotional chords. The songs are captured in the act of becoming; you feel viscerally involved in emotional crises rather than a spectator safe on the sidelines. This is dangerous music.

The title track is built around a blues riff tortured into a gruff, cathartic outpouring, like the way Iggy Pop would emot with salt-in-the-wound stridency back in his Stooges days. Parts of the album are as strange as a session with Captain Beefheart and the Magic Band. Listen to the turned-around beat, waves of amelodic distortion, and bizarre, sexually driven imagery ("Big black monsoon / Take me with you / What a monster! / What a night!") of *Meet Ze Monsta* and compare it with Beefheart's *sotto voce* blues come-on, *I'm Gonna Booglarize You Baby*. A dub-style bass line rumbles under Harvey's deceptively low-key recitative in *Working for the Man*. She opens her voice into a full-throated *cri de coeur* in *C'mon Billy*, a minor-key supplication to a former lover; the sexually charged *Long Snake Moan* ("You oughta hear my long snake moan," she screams like a Delta bluesman), and *The Dancer*, a dramatic coup de grâce filled with images of sin and salvation tugging the singer in opposite directions. The intensity may be too much for most listeners, as the songs lack the escapist elements on which most popular music is based. But in terms of content, emotional charge, and artistry, "To Bring You My Love" is a stunner. *P.P.*

KING CRIMSON
THRAK

VIRGIN 40313 (57 min)

Performance: Tentative
Recording: Widescreen

After all these years, progressive/art-rock remains the only Seventies music trend that hasn't become fashionable again. And before anybody says, "Thank God," I'll remind you of the exquisite strangeness of the genre's peak albums — Genesis's "The Lamb Lies Down on Broadway," Brian Eno's "Here Come the Warm Jets," and almost everything by King Crimson.

When Crimson last appeared, in the early Eighties, they pulled a neat trick by finding common ground between prog-rock and the then-current New Wave. This latest resur-



rection, however, sounds more like a tentative step back than a return to peak form. Although a teaser EP released last year suggested that Crimson was flirting with noise-rock à la Sonic Youth, that direction isn't really explored in "THRAK," where four returning members and two newcomers play in a double-trio lineup. Robert Fripp's guitar work is inspired as ever, and exploring Bill Bruford and Pat Mastelotto's drum interplay could keep you busy for weeks. But too much of the new material is either a recycling of earlier Crimson (the opening *Vroom* echoes 1974's *Red*) or light ballads better suited to singer-guitarist Adrian Belew's solo albums. Still, Belew's *Dinosaur* is a great pop song with lyrics that sound like an older-but-smarter rocker's battle cry. I hope Crimson makes good on its promise before becoming dormant again. *Brett Milano*



AARON NEVILLE
The Tattooed Heart

A&M 540 349 (55 min)

Performance: Hit and miss
Recording: Good

The idea of Aaron Neville's singing country music seemed ludicrous when, with the voice of an angel packed inside the bulk of a linebacker, he recorded George Jones's *The Grand Tour* a couple of years back. But Neville's excursion into country music saves the day in "The Tattooed Heart," where he attempts to put more of a soulful R&B edge on the songs, though too often (*My Precious Star*, *Beautiful Night*) ending up with somnambulistic MOR. Still, things come alive when Neville turns to *Why Should I Fall in Love*, a song in the mold of an old Freddy Fender hit where a build-up of repetitive triplets drives the rhythm. Neville also does well by three covers — Kris Kristofferson's *For the Good Times*, made popular by Ray Price; *Crying in the Chapel*, the pop-gospel hit for Elvis Presley and others before him, and *Use Me*, Bill Withers's 1970's soul hit. As for the rest, even the voice of an angel can't save songs too leaden to fly. *A.N.*

OH, KAY!

(George and Ira Gershwin)
NONESUCH 79361 (65 min)

Performance: Spry and spunky
Recording: Crisp and clean

This version of the 1926 Prohibition tpoof *Oh, Kay!* is the fifth release in Tommy Krasker's admirable series of reconstructed George and Ira Gershwin

Dave Matthews Band

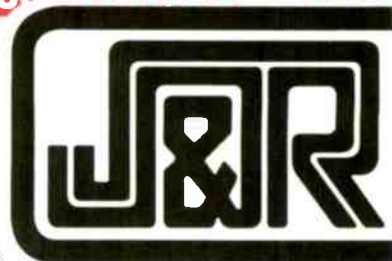
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CORAZON GITANO Paseo Latino

RCA 23454 (46 min)

Spanish Gypsy musicians are absorbing influences from all over the world, or so it seems. Here they combine flamenco guitars with such classic Latin American genres as rumba, salsa, and samba. One of the best flamenco fusion discs I have heard. *William Livingstone*



A.J. CROCE That's Me in the Bar

PRIVATE MUSIC 82127 (37 min)

That's Croce as in son of the late Jim Croce, but unlike his genial folkie dad, young A.J. is something of a bluesman — the nearest analogy would be Dr. John or Leon Russell. In any event, a very nice little album, with tasty instrumental support from the likes of Ry Cooder, producer Jim Keltner, and Los Lobos' David Hidalgo. **S.S.**

J.J. JOHNSON Tangence

VERVE 526 588 (57 min)

J.J. remains the fine trombone player he always has been, and his rich tone and impeccable taste here make this tangential outing, backed by Robert Farnon's large orchestra, a real ear caresser. Is it jazz? In most tracks, that would be a stretch, but check out *Opus de Focus*, which has most of the orchestra going out for a spot of tea. Do I like all this mush? Well, sure, I'm only human. **C.A.**

PATTI LUPONE Heatwave

PHILIPS 446 406 (60 min)

Presumably singing in English (though it's often hard to tell), LuPone bellows her way through twelve of the twenty-three

Irving Berlin gems served up here by John Mauceri and the crack Hollywood Bowl Orchestra. The instrumental tracks include Mauceri's spirited and stylish dusting off of the original soundtrack arrangements of Astaire and Rogers's *Let's Face the Music and Dance* (from *Follow the Fleet*) and the dance music for *Call Me Madam*. **R.H.**



PAT McLAUGHLIN Get Out and Stay Out

DOS/CAPITOL 7012 (36 min)

Roots rocker Pat McLaughlin's "lost album," the one his record company wouldn't release in the late Eighties, is finally deemed safe for public consumption. It's hard to tell how this might have been received in 1989, but by today's standards it's less than the sum of its parts, with some Boz Scaggish forays into mellow soul, vocals that alternately hint of Van Morrison and Sam the Sham, really dumb lines, and fairly lame faux blues. John Hiatt needn't worry. **A.N.**

CARMEN McRAE For Lady Day

NOVUS 63163 (51 min)

A tribute to Billie Holiday, this CD of a live 1983 radio broadcast from the Blue Note club does not represent the late Carmen McRae at her best. There's far too much chit-chat; someone should have told her to stop talking and stick to singing. **W.L.**

PATA NEGRA Como una Vara Verde

RCA 24492 (37 min)

A group from the south side of town (Seville, Spain), Pata Negra presents a funky fusion of classic flamenco with the jazz-inflected neo-Gypsy stuff, plus some honest-to-gosh rock attitude. Despite my classic-flamenco proclivities, I like it all very much. **W.L.**

REGINALD R. ROBINSON Sounds in Silhouette

DELMARK 670 (61 min)

Just 21 years old, this Chicago-based pianist is no ordinary wunderkind. Not only has he mastered ragtime piano, he also composes somewhat updated but classic-sounding rags that pale only slightly in comparison to those by Scott Joplin and Charles L. Johnson that are also included here. Robinson's feel for this archaic style of music is genuine, and he warrants praise for making imaginative use of tradition. **F.D.**

Broadway musicals, and it comes across with style and verve. Krasker not only presents the songs (including *Someone to Watch Over Me* and *Clap Yo Hands*) in their original order, unlike other recent revivals, but he also reinserts three good songs dropped before the original opening.

Dawn Upshaw's airy light-soprano is perfect for the title role originated by Gertrude Lawrence, and she sings it without the pretentiousness so many other opera stars bring to crossover projects. Romantic foil Kurt Ollmann is also first-rate, and Adam Arkin (of TV's *Chicago Hope*) makes the most of his role as a bootlegging butler. Eric Stern conducts with appropriate buoyancy. **R.H.**

STEVIE WONDER Conversation Peace

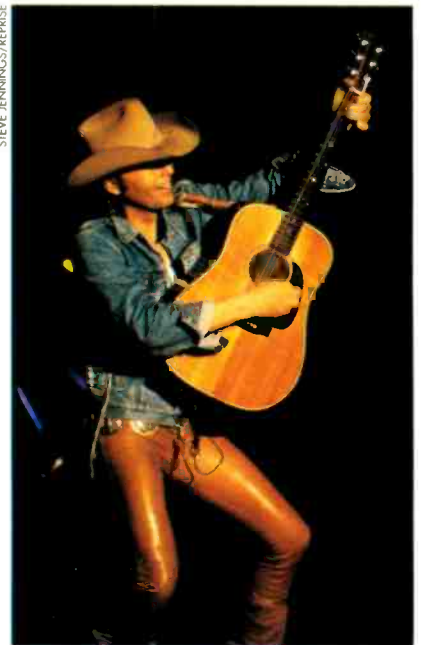
MOTOWN 530 238 (73 min)

Performance: Nice
Recording: Good

The Sixties live! Listening to Stevie Wonder's new album is like taking a trip in a wayback machine. Peace, love, and brotherhood are primary topics. Yes, you *can* make a difference. "We all play a part in each other's existences," he sings.

The quote is from one of the livelier cuts on "Conversation Peace," a litting piece of positive funk called *Take the Time Out*. Like every one of the thirteen songs on the album, it has an essential catchiness. The melody has definite appeal, and it's surrounded by an arrangement, mostly driven by synthesizers, that's as smooth as can be. Listening to it is a pleasure, although at over 5 minutes the pleasure seems to go on a little too long. And, as with every other song here, the lyrics are a little wordy, a little clunky. They include a few more platitudes than they should. They refer a little too often to a generalized reality — not something as distant as three decades ago, but something that hasn't been directly ex-

STEVE JENNINGS/REPRISE



Yoakam: autopilot or inspired?

perenced. Nonetheless, with Wonder's honeyed voice crooning the sentiments, that's not such a bad thing. Just about anybody you can name, from Michael Jackson to Tevin Campbell, has studied at the ton-sils of this master.

Unless you are the most dedicated of cynics, there are considerable pleasures to be had from "Conversation Peace." It may not be Stevie Wonder in his prime, but then *nothing* these days matches Stevie Wonder in his prime. Take it for what it is, however, and you will have a fine time. *R.G.*

DWIGHT YOAKAM

Dwight Live

REPRISE 45907 (71 min)

Performance: Roller-coaster

Recording: Good remote

Dwight Yoakam in concert is a strange animal, an uneven performer who goes on automatic pilot as often as he pulls out an inspired rendition (sparked, perhaps, by Pete Anderson's eloquent guitar). This seventeen-song concert album, taped on the 1994 "This Time" tour, is no different. Yoakam sleepwalks and slurs his way through much of the program, but he re-bounds with the well-oiled engines of *Please, Please Baby* and *Long White Cadillac* and turns painfully gorgeous on *Two Doors Down*. There are programming oddities, too. While the set includes a rocking-blues version of the Bill Monroe bluegrass standard *Rocky Road Blues*, as well as two Elvis Presley covers for which Yoakam is somewhat known (*Little Sister* and *Suspicious Minds*), the wildly popular *Ain't That Lonely Yet* is nowhere to be found.

If you're just a stone Yoakam freak, you'll want to have "Dwight Live." But as live records go, this one falls solidly in the middle. As in mediocre. *A.N.*

Collections**COME TOGETHER:****AMERICA SALUTES THE BEATLES**

LIBERTY 31712 (56 min)

Performance: Unnecessary

Recording: Very good

Seventeen, count 'em, seventeen country and gospel acts (Billy Dean, Randy Travis, Susan Ashton & Gary Chapman, and more) homogenize the hell out of the backbone of Sixties pop to predictably ho-hum results (John Berry's *The Long and Winding Road*) and sometimes to disastrous ones (Kris Kristofferson's *Paperback Writer*). One saving grace: The Texas hobo feel of Willie Nelson's *One After 909*. Bet they don't try this with the Stones. *A.N.*

ENCOMIUM:**A TRIBUTE TO LED ZEPPELIN**

ATLANTIC 82731 (52 min)

Performance: Dreary

Recording: Maximum whomp

It is a measure of this project's lack of luster that the opening track is by a band that isn't even together anymore, 4 Non Blondes, although surely the compilers

could have come up with somebody better to lead off this tribute even if they were. "Encomium" purports to link Led Zeppelin in a chain of causality with alternative bands of various stripes, from pop softies like Duran Duran and Sheryl Crow to harder goods like Helmet and the Rollins Band. Much of it is so inept that hearing the covers only makes you long for the originals in order to flush from your mind the bad sound of, say, Blind Melon or Big Head Todd and the Monsters.

The few happy exceptions include Hootie and the Blowfish's casual back-

porch take on the tongue-in-cheek country blues of *Hey Hey What Can I Do* and the nicely finessed, quietly edgy new look at *Dancing Days* by Stone Temple Pilots. The rest is a washout, including Tori Amos's duet with Robert Plant, *Down by the Seaside*, a sibilant artistic indulgence in which each tries to out-suffer the other. Lyrics that seemed kind of funny the first time around ("Can you still do the twist? / Do you find you remember things that well?") are recited as portentously as Hamlet's soliloquies. Now they're kind of funny without meaning to be. *P.P.*

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JAZZ REVIEWS**JOHNNY GRIFFIN**Chicago, New York, Paris
VERVE 527 367 (63 min)Performance: Almost routine
Recording: Okay

Although "Chicago, New York, Paris" is more of a blowing date than either of his previous Nineties releases, Johnny Griffin sounds less frisky here than he did on "The Cat" and "Dance of Passion," carefully arranged albums in which his solos bristled with invention. Judged by Griffin's own recent standards, this new disc is just average. Even so, he is always worth hearing. In common with most tenor saxophonists of his generation, Griffin was overshadowed by Sonny Rollins, Stan Getz, and John Coltrane thirty years ago. Now he is at the top of his game — something confirmed here only during his casually inventive exchanges with drummer Victor Lewis on

Leave Me Alone, though ballads such as *My Romance* and *You Must Believe in Spring* have their own breathy appeal. There simply isn't very much energy here, and for whatever reason bringing Griffin together with wonder-kid trumpeter Roy Hargrove fails to ignite the expected sparks. *F.D.*

ROY HAYNES

Te-Vou!

DREYFUS 36569 (53 min)

Performance: One bad apple
Recording: Good

Esqire once named Roy Haynes one of America's Best-Dressed Men, and while that designation is not reflected in the cover photo of "Te-Vou!," the disc itself demonstrates that he remains one of America's best drummers. This quintet album has alto saxophonist Donald Harrison alternately easing along and leaping effortlessly across rhythmic intricacies, to which bassist Christian McBride contributes abundantly. Pianist David Kikoski is not particularly exciting, but I am more bothered by guitarist Pat Metheny, who brings an uncomfortable Lite-FM feel to the album. *C.A.*

FRED HERSCH & JAY CLAYTON

Beautiful Love

SUNNYSIDE 1066 (62 min)

Performance: Largo
Recording: Excellent

Perhaps because his touch is so lyrical, Fred Hersch is one of the rare postbop pianists who doesn't make accompanying a singer sound like a tiresome chore. His collaboration with Jay Clayton, though, is a bit of a disappointment. Best known for her wordless, hornlike improvisations, Clayton is also a fine interpreter of standards of the sort featured on "Beautiful Love." Her intonation is slightly off here, however, and the tempos she and Hersch have chosen are generally a tad slower than they need to be. The result is a somber recital that hardly shows Clayton off at her best. *F.D.*

IVO PERELMAN

Man of the Forest

GM 3029 (46 min)

Performance: Invigorating
Recording: Quite good

If you have a venturesome spirit, Brazilian tenor saxophonist Ivo Perelman's "Man of the Forest" is just what your ears need. The Sixties' avant-garde movement gave us enough screams and squeaks to last several decades, but much of that was essentially the product of musicians who lacked control over their instruments. Perelman, by contrast, knows exactly what he's doing, so when he seems to have built a solo to a fever pitch, he's actually expressing himself rather than showing any instrumental inadequacy. A sense of humor comes to the fore in *Cantiga Caicó*, a wonderful bit of impressionism that, like all the tracks here, is based on a motif by Heitor Villa-Lobos. Joanne Brackeen, Nana Vasconcelos, Billy Hart, and Mark Helias are among the supporting players who make this album such an original delight. If there is hope for further jazz development, it's in albums like "Man of the Forest." *C.A.*

Silent Movies, Postmodern Jazz

It's happening frequently enough to be called a trend, and it's finally being recorded. Postmodernist ensembles are being asked to provide music for screenings of classic silent films of the 1920's — to engage the screen in a "dialogue," as soprano saxophonist Phillip Johnston (formerly of the Microscopic Septet and now leading a six-piece outfit called Big Trouble) puts it in the liner notes to his score for Todd Browning's *The Unknown* (1927). What's exciting about the premise

is that in the absence of "period" music such as we might expect to hear with a silent movie, this dialogue can amount to a full-scale dialectic between the movie's day and ours. More to the

point, however, is the question of whether the music seems complete without the flickering images that occasioned it.

Four new albums provide varying answers. Johnston's *The Unknown* — yearning and far more whimsical than you'd expect of a score for a Lon Chaney movie about self-mutilation and the sexual phobias of circus folk — passes the test with flying colors. So does Bill Frisell's suite-like score for Buster Keaton's *Go West* (1925), which can be recommended as both an evocation of the always out-of-his-element Great Stone Face and the

latest in a string of imaginative albums by a guitarist whose music veers knowingly in the directions of metal and country, yet still qualifies as state-of-the-art Nineties jazz. Frisell's scores for Keaton's *The High Sign* and *One Week*, both from 1920 and both included on a companion disc to *Go West*, are too sketchy and episodic to make much of an impression as independent music. The most synesthetic entry among the four albums may be bassist Mark Dresser's *The Cabinet of Dr. Caligari*, with Dave Douglas on trumpet and Denman Maroney on prepared piano — an album of music as angled and jarring as the Expressionist silent film it was meant to accompany. *Francis Davis*

MARK DRESSER

The Cabinet of Dr. Caligari

KNITTING FACTORY WORKS 155 (50 min)

BILL FRISELLMusic for the Films of Buster Keaton:
Go West

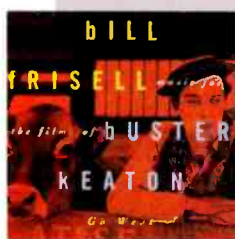
ELEKTRA NONESUCH 79350 (69 min)

BILL FRISELLMusic for the Films of Buster Keaton:
The High Sign/One Week

ELEKTRA NONESUCH 79351 (37 min)

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AVANT 037 (33 min)

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DAVID PATRICK STEARNS

BACH: Goldberg Variations

Gershon Silbert (piano)
BEQUEST 10007 (59 min)

Performance: Impeccable, deeply felt
Recording: Clear

I'm not familiar with Gershon Silbert, a pianist of Israeli origins who has apparently not been active in public for many years. Yet this is a wonderful performance, technically impeccable, full of deep feeling, respect, and understanding of the music. If it's not quite as personal and quirky as those of, say, Glenn Gould or João Carlos Martins, Silbert brings qualities of presence and clarity that are quite remarkable.

The aria and each of the thirty variations requires a set of decisions about tempo, articulation, dynamics, touch, phrasing, and feeling. In this performance each of those decisions seems to be completely thought out and, well, just right. The one possible drawback, a rather colorless piano sound, may actually be an advantage because the sonority of the modern instrument is kept to a minimum, which allows the pianist and not the piano to do the work. *E.S.*

BEETHOVEN: Piano Concertos Nos. 1-5

Pollini: Berlin Philharmonic, Abbado
DEUTSCHE GRAMMOPHON 439 770
(three CD's, 173 min)

Performance: Variable
Recording: Airless and synthetic

The First Concerto is by far the best performance here. Maurizio Pollini has a grand time with the virtuosic demands of the high-spirited solo part, giving it all the fingering clarity and youthful energy it needs, and the orchestra, led by Claudio Abbado, is with him all the way. Similarly, the Second Concerto is given a fairly crisp, alert performance that is never too big for the work's Mozartean roots. But even though all five concertos were recorded live in close proximity to each other, Nos. 3 and 5 seem to come from a different time and place. The hamfisted orchestral playing — the Berliners sound bored and lethargic — drags Pollini down. He resists the downward pull better in the "Emperor" Concerto, and he's at his sterling best in its unaccompanied passages, such as the introduction to the third movement, which he plays with such startlingly clear chord voicings and insight that it will forever change the way you hear this music.

The most original performance is of the Fourth Concerto, where the pianist is normally a lofty, godlike figure. Pollini takes as aggressively virtuosic an approach here as in the first three concertos, perhaps in an

PHOTO: JORDAN DOKNER/DG

A Deluxe Debut



Composer Todd Levin

Young composers generally have a hard enough time getting their music played at all, but Detroit-born, thirty-three-year-old Todd Levin has managed to get his music recorded by no less than the venerable Deutsche Grammophon. A DG executive heard a tape of a

Cleveland Orchestra performance of a Levin piece called *Turn* and was intrigued by its use of a virtuoso classical orchestra for a work that combines techno dance music with quotations from Beethoven to Tchaikovsky to

the soundtracks of James Bond movies.

"I'm not really interested in composing an orchestra piece that sounds like an orchestral piece — I'd rather it sound like a techno club, a video game, or industrial Muzak," says Levin. The CD, titled "Deluxe" and re-

leased this spring, also includes three other works (*Blur*, *Everyday*, and *Swirl*) and features the London Symphony Orchestra conducted by David Alan Miller, with vocals by mezzo Mary Nessinger and Levin himself.

BERG: Songs

Norman; Schein: London Symphony, Boulez
SONY 66826 (48 min)

Performance: Magnificent
Recording: Excellent

With this magnificent new set of Alban Berg's lieder, drawn mostly from his early works, Jessye Norman proves once again that there is no finer interpreter of the art song now before the public. She captures the shifting moods of rapture and melancholy in the Seven Early Songs with both passion and precision, but the great discovery in this recording is the set of five orchestral songs on "picture-postcard" texts by Peter Altenberg. These little jewels of modernist haiku are astonishing work by a 27-year-old composer who was just finding his voice. Their mood of alienated despair speaks in such a contemporary idiom that it's surprising they have been so neglected in the catalog.

Pierre Boulez and the London Symphony are ideal accompanists in these two sets, limning every note with deftness, yet finding the full measure of desire and pain in the music. Pianist Ann Schein ably accompanies Norman in twelve selections from the *Jugendlieder* and two other songs. Norman's voice, which two years ago had begun to sound dry in the upper register, has recovered all of its exquisite warmth of old, soaring seamlessly from top to bottom of what seems to be an unlimited range. *J.J.*

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Norman: passion and precision in Berg

**BRAHMS: String Quartet No. 2;
Piano Quintet**

Virzaladze; Borodin Quartet
TELDEC 97461 (77 min)

Performance: Outstanding
Recording: Excellent

The Borodin Quartet's recent disc of the first and last of Brahms's three string quartets carried an implicit promise that the cycle would be completed but gave no hint as to the eventual coupling for No. 2. Although we might have guessed it would be the Piano Quintet, few would have thought of the pianist Elizo Virzaladze, who has not, after all, turned up very often either in our recital halls or in recordings. We can only be very glad she turned up in *this* recording, for she is very much part of the driving force that makes its release an "event" in the very best sense.

All five players bring to this familiar work a sense of nothing less than exalting rediscovery in the intensity of their commitment and the way they respond to one another as well as to the music. In addition to the all-too-rare old qualities of communicativeness and breadth, they play with a technical assurance that was not always part of the various "golden ages." Intonation is not a casual consideration to the Borodin players, and their regard for steady rhythms is just as evident. Virzaladze is their ideal keyboard associate, but they are no less secure on their own; the realization of the Second Quartet here is downright elegant as well as rich in warmth of heart. In all, and with the further benefit of having been taped in the rich ambience of the Maltings, Snape, this is simply one of the choice chamber-music recordings of the decade. *R.F.*



ELGAR: Cello Concerto
LALO: Cello Concerto

Noras; Finnish Radio Symphony, Saraste
FINLANDIA 95768 (55 min)

Performance: Noble
Recording: Vivid

Most of Arto Noras's relatively few but outstanding recordings have been of music by his Finnish compatriots, such as Aulis Sallinen. This vividly recorded disc of the Elgar and Lalo concertos shows his mastery in the standard repertory. It is not only impressive but immensely enjoyable, because Noras never regards what he's playing as a mere "vehicle"; there is conviction in every phrase. He is the kind of player who can be supremely confident without seeming to take anything for granted,

as secure from lapses in taste as from technical slips. The sound he draws from his instrument supports the notion of the cello as an essentially *noble* voice, and that quality suits the Lalo every bit as richly as the Elgar.

Noras seems to instinctively balance elegance and passion in both of these concertos, and he has a fine partner here in Jukka-Pekka Saraste, who has the orchestra on its toes for a full-fledged dialogue rather than mere "accompaniment." There are other attractive recordings of both works, but no other disc, as far as I know, that packages them together — and none that offers a superior account of either of them. *R.F.*

**HAYDN: Cello Concertos Nos. 1 and 2;
Symphony No. 104 (arr. Salomon)**

Wispelwey; Florilegium
CHANNEL 7395 (73 min)

Performance: Splendid
Recording: Likewise

The young Dutch cellist Pieter Wispelwey and the conductorless British chamber orchestra Florilegium are splendid partners in the two Haydn cello concertos. The give-and-take in their playing is on a level more associated with chamber music than most concerto playing now, giving us in that respect the best of both worlds, and their enlivening, warm-hearted approach is ideally suited to this material. Tempos are brisk but never quite breathless, articulation is clean, and throughout both concertos there is a sense of utter involvement and utter joy in pointing up Haydn's witty asides in the outer movements, his tenderness in the slow ones, and the remarkable colors he draws from his modest instrumentation. The vivid, beautifully balanced recording is itself a major factor in the overall appeal of this disc.

Between the two concertos the Florilegium Chamber Group, with Wispelwey

sitting out, performs the last of Haydn's symphonies in an arrangement for flute, string quartet, and fortepiano by Johann Peter Salomon, the very musician and impresario who assured himself a bit of immortality by bringing Haydn to London. This, too, receives a tasteful, lively performance, but the arrangement cannot help sounding inadequate and just a little silly. The disc might have been more attractive without it; in any event, the two concertos provide more than adequate return for anyone's investment. *R.F.*



**LASSO: Villanelle, Moresche e
Altre Canzone**

Concerto Italiano, Alessandrini
OPUS III OPS 30-94 (59 min)

Performance: Renaissance roughhouse
Recording: Very good

Don't be fooled by this one. A collection of villanelles, morescas, and other songs by the great Renaissance composer Orlando di Lasso recorded at the Holland Early Music Festival by the Concerto Italiano may sound suitably dignified and stately. Let me assure you it is not. It is a racy, rascally, smartass collection of off-color, satirical, and bawdy drinking songs. Racy and even racist, except that Lasso and his anonymous

Melodiya Reborn

Since 1951, the Russian Melodiya label has been synonymous with the best of that country's musicmaking. Unfortunately for Western collectors, the name has also meant difficult or impossible to find recordings, often in notoriously bad pressings many generations removed from the originals. Like many things in Russia, that's history now. The German-owned BMG Classics has acquired the Melodiya catalog and is digitally remastering hundreds of historic recordings for release on CD.

BMG's initial series of Melodiya CD's, released in June, includes an eleven-disc boxed set of "The Great Pianists," representing five generations of Russian pianism, a ten-disc "Mravinsky Edition," with the great conductor Yevgeny Mravinsky leading his Leningrad

Philharmonic, a five-disc set of "Russian Choral Music," and a legendary recording of Shostakovich's Twenty-Four Preludes and Fugues by the pianist Tatiana Nikolaeva. A budget-price sampler from the three large sets provides a good way to get acquainted with this Russian musical legacy.



lyricists were equal-opportunity offenders; everybody gets his turn — the randy African slave laborer, the loutish German mercenary, the provincial boobs from Padua and Venice with their country accents.

Can this really be Orlando di Lasso, the distinguished composer of august madrigals and motets? Lasso, an Italianized lowlander from Flanders, obviously had his Rabelaisian side, now finally revealed to us in this zippy recording. He published two large collections of this material, including original works as well as arrangements and adaptations of popular songs. Inevitably, he polished up the cruder edges of the music, but the rough and ready texts, often in dialect and full of scatological puns and off-color jibberish, were apparently untouched, leaving their full range of rawness and vitality.

The Concerto Italiano — despite its name a vocal group, led by Rinaldo Alessandrini — makes no attempt to smooth over the coarseness, either. Quite the contrary, they plunge in with vitality and spirit, managing the difficult task of conveying the peculiar mixture of elegance and crudeness that is the key to these pieces. The music slides easily and without apology from back alley to salon, from street to court and back again, and that was, no doubt, the key to its popularity. Only in two madrigal settings of Petrarch sonnets is the purely musical line allowed to dominate; otherwise, these naughty, nose-thumbing numbers are treated like little dramatic scenes and played for their full value of character, slapstick humor, nastiness, and ribaldry. All in all, an amazing and shocking recording, and, once you get used to the idea of Renaissance roughhouse, a wickedly amusing one. *E.S.*

MOZART: La Clemenza di Tito

Bartoli, Heilmann, Jones, Bonney, others;
Academy of Ancient Music and Chorus,
Hogwood

L'OISEAU-LYRE 444 131 (137 min)

Performance: Superb
Recording: Fine

Few operas have ever had a more up-and-down career with the public than Mozart's last one, *La Clemenza di Tito*, written in a matter of weeks in the summer of 1791, shortly before his death. The Empress Maria Louisa is said to have called it "German swinishness" after its première in Prague, yet a scant seven years later, Mozart's first biographer called it "his most perfect work." Popular throughout the early years of the nineteenth century, it lapsed into almost total oblivion until a series of revivals in the 1980's rediscovered its intense dramatic beauty.

For his recording, Christopher Hogwood has assembled a great cast of singers. Mezzo-soprano Cecilia Bartoli is ideal as the traitorous Sesto, and her performance is a stunning display of vocalism. The rosy, perfumed warmth of her voice works magic on "Parto, parto," her big aria in the first act, with perfectly articulated passagework in the duet with clarinet. Della Jones is every bit her equal in the role of Sesto's co-conspirator Vitellia, her broad, coppery soprano admirably expressive and flexible. The rest of the cast, which includes tenor Uwe

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Heilmann as Tito and soprano Barbara Bonney as Servilia, is also superb, with the possible exception of mezzo Diane Montague, who is a trifle wooden as Annio.

Anyone who still harbors doubts about Christopher Hogwood's excellence as a Mozart conductor ought to be persuaded by this performance, which achieves just the right balance between fluid expressiveness and noble dignity. This is the first recording of *Clemenza* to include all of the recitatives (correctly accompanied by fortepiano rather than harpsichord) and the best yet made of this underappreciated opera. J.J.

RAUTAVAARA: Cantus Arcticus; Quartet No. 4; Symphony No. 5
Sirius String Quartet;
Leipzig Radio Symphony, Pommer
CATALYST 62671 (71 min)
Performance: Good to excellent
Recording: Impressive orchestra

Sibelius recommended his compatriot Einojuhani Rautavaara (b. 1928) for a scholarship that sent him to Tanglewood for study with Copland, and his subsequent mentors included Roger Sessions. So it is unsurprising that he not only commands every device in the twentieth-century music

arsenal but also deploys them with immense skill. This CD in BMG's Catalyst series is a sampler of his work between 1972 and 1986.

Cantus Arcticus, the most immediately appealing piece here, consists of three movements in which the taped cries of wild birds are blended with highly atmospheric and uncannily moving orchestral music. The String Quartet No. 4, two slow movements and a predominantly propulsive finale, is of tougher fiber in a post-Bartok/Prokofiev vein. The Symphony No. 5, in one grand-scale movement, is alternately expressionist-eruptive and post-Sibelian nature-impressionist in style, with a good bit of Messaienian bird call and related devices added to the mix. But it coheres structurally as a listening experience, and the orchestral colors are thrilling. The final pages, saturated with a feeling of immense ocean depths, show Rautavaara's poetic mastery at its peak.

Max Pommer leads the Leipzig Radio Symphony Orchestra in superb performances of the *Cantus Arcticus* and Fifth Symphony (originally released on Finland's Ondine label). The sound is magnificently spacious, rich in detail, and wide in dynamic range — these tracks are prime sonic demo material. Not as much can be said for the string-quartet tracks, which offer a conscientious and rather driven reading by a young ensemble recorded close up in a very tight acoustic. D.H.

ROSSINI: La Cenerentola

Larmore, Giménez, Quilico, Corbelli, others;
Orchestra and Chorus of the Royal Opera
House, Covent Garden, Rizzi
TELDEC 94553 (two CD's, 154 min)

Performance: Mostly very good
Recording: Excellent

With Carlo Rizzi joining such earlier champions as Claudio Abbado (DG), Neville Marriner (Philips), and Riccardo Chailly (London), there are now four recommendable versions of Rossini's charming Cinderella opera, *La Cenerentola*. Unqualified endorsement of any one at the expense of the others, however, is difficult.

In the title role, mezzo-soprano Jennifer Larmore captures the melancholy aspects of the early scenes very well and easily triumphs over the decorative challenges of the sunny conclusion. With the sweet-toned and equally agile tenor Raúl Giménez as the Prince, we have a fine pair of Rossinians.

The rest of the cast is good but not ideal. Bass Alessandro Corbelli has the right style and mannerisms, but his tone is not perfectly centered and lacks the weight for Don Magnifico's pontifications; Dandini is the better role for him (as he proved in the London set). The present Dandini, baritone Gino Quilico, sings well but lacks a certain buffo sparkle. Consequently, the Act II duet "Un segreto d'importanza," one of the gems in the opera, does not come off with the required brio. Alastair Miles, a rising British bass, makes the most of his unctuous aria as Alidoro, and as the two sisters, Adelina Scaramelli and Laura Polverelli characterize their roles with suitable venom and acidity.

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BACH: Mass in B Minor

Amsterdam Baroque Orchestra and Ensemble, Koopman

ERATO 98478 (107 min)

Ton Koopman takes a straightforward approach to Bach's Mass in B Minor, eschewing the drama of the cantatas and passions. The main distinction of his reading is in bringing out the musical structure. That doesn't make for the most outgoing performance of this work, but as it is well sung, well played, and well recorded, it may prove to be a highly enduring one. *D.P.S.*



BEETHOVEN: The Creatures of Prometheus

Chamber Orchestra of Europe, Harnoncourt
TELDEC 90876 (69 min)

The sixteen numbers, plus overture and storm music, that make up the youthful Beethoven's score for a ballet about Prometheus's creation of humankind make for a pleasant hour's listening. The concluding dance, of course, is famous as the basis for the finale of the "Eroica" Symphony. Nikolaus Harnoncourt directs his young Chamber Orchestra of Europe players in a reading that is alternately virile and tender, and the sound from Vienna's Musikverein is big and resonant. *D.H.*

CHAVEZ: Xochipilli; Suite for Double Quartet; Tambuco; Energía; Toccata

La Camarata. Tambuco, Mata cond.
DORIAN 90215 (66 min)

Carlos Chavez was a major figure of the Mexican renaissance. Here we have his biting 1925 nonet called *Energy* and, from the 1940's, the all-percussion *Toccata* and *Xochipilli, An Imagined Aztec Music*. The powerful 1964 percussion masterwork *Tambuco* gave its name to the Mexican percussion quartet that plays it here. *Tambuco* and *La Camarata*, both under the direction of the late Eduardo Mata, give subtle and nuanced readings of all these pieces. A special feature is the use of both contemporary and pre-Colombian percussion instruments. *E.S.*

SCHUBERT: Symphony No. 9

Bavarian Radio Symphony, Giulini
SONY 53971 (57 min)

Recorded in concert at Munich's Herkulessaal under the direction of that most

humanistic of Italy's conductors, Carlo Maria Giulini, this Schubert Ninth's ultra-leisurely pacing and emphasis on the *legato* element lames the music's impact for me. Not even the ravishing sounds and phrasing lavished on the slow movement's secondary melody can redeem the performance as a whole. Nice sound, but why leave in the rather perfunctory applause at the end? *D.H.*

VAUGHAN WILLIAMS: The Wasps, Overture; Tallis Fantasia; Norfolk Rhapsody No. 1; other works

Academy of St. Martin in the Fields, Marriner
PHILIPS 442 427 (72 min)

Every record collection should have at least one Vaughan Williams disc, and his short orchestral works are really quite satisfying. Filled with nostalgia for a rural English Neverland, pieces like *In the Fen Country* have a sepia-toned melancholy that enfolds the listener with a delicious longing. This CD of idiomatic, warmly recorded performances is a good choice in a crowded field. *J.J.*

IKOS

Music of Gorecki, Tavener, and Pärt

Choir of King's College, Cambridge, Cleobury
EMI 55096 (59 min)

Pairing Gregorian chant and the currently fashionable "holy minimalists" isn't as natural as it might seem. Though the music here all has a mystical bent, the chants are based on ancient modes that predate modern tonality, while Gorecki and Co. are so oriented toward tonal centers their music can seem earthbound and contrived. There are some good works, such as Gorecki's *Amen* and Tavener's *Funeral Ikos*, but also some pretty wacky ones, such as Tavener's comically undulating, Byzantine-flavored *Magnificat*. *D.P.S.*



**LUCIANO PAVAROTTI
In Central Park**

Members of New York Philharmonic, Magiera
LONDON 444 450 (77 min)

Half a million people gathered in Central Park to hear Luciano Pavarotti on June 26, 1993. The applause and lusty yells between the twenty selections are likely to be less intrusive in the video counterpart to this CD. Musically there are no surprises: familiar arias by Verdi, Donizetti, Cilea, Massenet, and Puccini mixed with a few crowd-pleasing Italian favorites, with interludes by flutist Andrea Griminelli and the Boys Choir of Harlem. Pavarotti's singing — and his crystalline enunciation — still commands admiration. *G.J.*

like a virtuoso ensemble. That may have tempted Rizzi to favor extremely fast tempos for some ensembles, such as the quintet "Nel volto estatico" in Act I. It moves with zest and precision but would have made more effect at a less hectic pace. *G.J.*

**SHOSTAKOVICH: Symphony No. 10
MUSSORGSKY: Songs and Dances of Death**

Lloyd; Philadelphia Orchestra, Jansons
EMI 55232 (72 min)

Performance: Very good
Recording: Opulent

Mariss Jansons certainly has the full measure of the 20-minute-plus opening slow movement of the Shostakovich Tenth. I know of few other first movements in the literature that demand as much in terms of both a long-sustained line and a dramatic development. Jansons sustains the line, but I'd like even more intensity in the drama, as in, say, the Karajan or Mravinsky recordings of this work. The scherzo has plenty of sizzle, though, and Jansons is phenomenal when it comes to contrapuntal delineation. The second half of the symphony receives performances from the orchestra's solo winds that can only be described as ineffably haunting — most memorably in the extended pages that pave the way for the final movement with its breakthrough and apotheosis of the Shostakovich signature theme.

Yet, for all the merits of Jansons's interpretation, I'd have preferred something more like the rough and ready sound of his own Oslo Philharmonic. The sound of the Philadelphia Orchestra as recorded in Fairmont Park Memorial Hall is some of the richest I have heard from that source, although a touch more timpani impact on the D-S-C-H figure at the close would have been welcome.

The CD is filled out with Mussorgsky's great *Songs and Dances of Death*, in the 1962 Shostakovich orchestration. Bass Robert Lloyd, endowed with an impressive voice as well as musical taste, sings what Mussorgsky wrote rather than resorting to the *parlando* manner. The finale, *Field Marshall Death*, can seem anticlimactic despite the chilling orchestral coloration, but Lloyd and Jansons turn it into an awesome culmination. *D.H.*

Collections

**PEPE ROMERO
Noches de España**

PHILIPS 442 150 (69 min)

Performance: Lively, masterly
Recording: Full

"**N**oches de España." a most effective collection by the lively master Pepe Romero, is subtitled "Romantic Guitar Classics," which is more or less having it both ways. In fact, much of the music here belongs to the classic repertoire of Spanish music, beginning with fantasias by the Renaissance *vihuela* composers Luis Milán and Alonso de Mudarra and continuing

with a rediscovered classical fantasia by Fernando Sor, who was a contemporary of Schubert. Having bought the manuscript of this forgotten piece, Romero gives it its recording première: it couldn't have had better luck in its second life. A *Gran Jota* by Francisco Tárrega from the turn of this century, a knockout virtuoso turn, sounds as though it had been written with Romero in mind. Selections by Albéniz, Granados, and Falla, as well as an elegant and modestly grand sonata by Turina, take us well into this century, and the CD finishes with more recent works by Rodrigo, Torroba, and Pepe's father, Celedonio Romero.

It could have been amounted to a hodgepodge, but in Romero's good hands it's a stimulating tour of some musical castles in Spain, one more impressive than the next. Nice-sounding recording too — full but not overblown. *E.S.*



THE THREE COUNTERTENORS

Scholl, Visse, Berin; Orchestre Philharmonique de Camargue. Wagner

HARMONIA MUNDI 901552 (35 min)

Performance: Excellent
Recording: Very good

In this skillful spoof, three gifted falsetrists — Andreas Scholl, Dominique Visse, and Pascal Bertin — poke fun at the overblown concerts staged in Rome and Los Angeles with the Three Tenors (Carreras, Domingo, and Pavarotti). With merciless wit they parody the vulgarity of the Three Tenors' programming and arrangements and their self-congratulatory horsing around. The countertenors prove that they can really sing in arias intended for tenors and mezzo-sopranos (the Habanera from *Carmen* and "Mon coeur s'ouvre à ta voix" from *Samson and Delilah*, for example) as well as those trite old pop tunes *Maria* and *My Way*. Idolatrous fans of the Three Tenors might want to spank these naughty boys and tell them it's not nice to mock their elders, but for most operatic enthusiasts they have produced the perfect party record.

William Livingstone

JULIAN LLOYD WEBBER
English Idyll

Academy of St. Martin in the Fields. Marriner
PHILIPS 442 530 (60 min)

Performance: Mellifluous
Recording: Pleasing

The cellist brother of Andrew Lloyd Webber has made something of a special career for himself with a substantial series of tasteful lollipops composed or transcribed

for his chosen instrument. You might think, therefore, that this all-British program is no more than an hour of "easy listening," but the Elgar Romance in D Minor is genuinely poignant and no mere tidbit, Walford Davies's famous *Solemn Melody* is eloquent in its noble fashion, and Percy Grainger's arrangement of *Brigg Fair* is a true gem. The real surprises, however, are Gustav Holst's *Invocation*, a substantial piece from the period when *The Planets* was gestating, and the strikingly individual 1927 *Pastoral and Reel* by the all but forgotten Cyril Scott. The touches of pizzicato and glissando in

its first part would do credit to Bartok, and the ensuing jig is a fine study in timbral color and harmony.

The solo performances are exemplary throughout. Neville Marriner and his St. Martin in the Fields players provide fine backing in ten of the thirteen numbers, including pieces of Vaughan Williams and Delius. John Birch is the organist in two others, and John Lenahan plays the obbligate piano part in the Scott reel. The recording is remarkably intimate considering that it was made in a London church. This is fine listening all the way. *D.H.*

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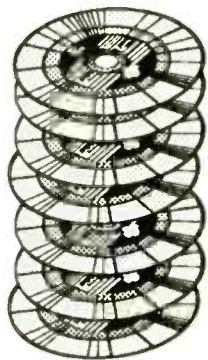
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THE HIGH END

BY PETER W. MITCHELL

Exploring the Near Field

High-end audiophiles and teenage computer nerds have something in common, though they may not know it. The interest that they share may also be the answer to a bargain-hunter's prayer: superb stereo sound at a budget price.

Now that I've got your attention, let's look at some background. During the past year a new abbreviation has appeared on the audio scene: SE, for "single-ended." It refers to a type of amplifier, usually employing vacuum tubes, that amplifies the entire audio signal in a single output circuit. Most audio amplifiers, on the other hand, are "push-pull" designs that amplify the positive and negative halves of the audio signal in separate complementary circuits. The two halves of the waveform are rejoined into one continuous signal at the output terminals, ideally without any crossover distortion where they join.

Enthusiasts love the purity of SE amplification. But there's a catch: Most SE designs are limited to only a few watts of output power. One obvious solution to that problem is to choose efficient horn speakers that need only a few watts to play very loud. But most audiophiles consider horn speakers excessively colored.

There's another solution. Recording-studio engineers have used it for many years, and it is now being introduced to the consumer market through a distinctly nonaudiophile venue — via multimedia computers that play CD-ROM discs containing video images and stereo sound.

I'm talking about an arrangement known as near-field listening. Strictly speaking, that is a misnomer. "Near-field" has a technical meaning that relates the diameter of the speaker diaphragm to the wavelength and the distance. To avoid arguments over technical definitions, some studio engineers call it "close-field" monitoring instead. You could just call it "arm's-length" listening, since it involves placing a pair of small loudspeakers in front of your face, no more than 3 feet away and separated by about the same distance. If you stretch both arms straight out in front of you, your fingertips should touch the speakers.

With multimedia computers, the speakers may simply be placed on a tabletop,

on each side of the screen. In recording studios, near-field speakers are usually placed on the "meter bridge" of a large mixing console, but reflections from the console surface may produce severe colorations that adversely affect the sound. To deliver the best sound, the speakers should be mounted on stands at ear level in front of your chair, operating in free air, with no reflecting surfaces nearby.

At a listening distance of 2 to 3 feet, the sound level from a loudspeaker is about 7 dB higher than at a normal 9-foot distance. Translation: Near-field listening requires approximately 7 dB less amplifier power (about one-fifth as much) to deliver the same sound level to your ears. A sound level that would normally require a 40-watt amplifier can be achieved in a near-field setup with just 8 watts. So near-field listening just might be the way to get the best out of a single-ended amplifier.

Even if you don't care about that, near-field listening has other potential benefits, such as saving you money by requiring only a modest amplifier to deliver high sound levels at your ears. Also, in a near-field setup the sound striking the walls of your room is about 10 dB less intense than the sound at your ears, so you're less

the speakers in the opposite half of the room, 8 to 10 feet away from your chair. At bass and midrange frequencies your left and right stereo speakers normally fill the room with their sound, and at a 9-foot distance you are in the room's reverberant field (where the intensity of the sound remains approximately constant as you move about in the room). Result: Only about half of the sound arriving at your ears comes directly from the speakers. The other half arrives after reflecting off walls and other surfaces.

The inevitable consequence is that the sound of most speakers is altered by the acoustics of the room. At midrange frequencies you hear a blend of on-axis sound (directly from the speakers) and off-axis sounds reflecting off the ceiling, walls, and floor. That blending alters sonic timbres, tends to broaden the stereo image, and flattens depth information in the reproduced soundstage. At low frequencies, the room's standing waves turn the speaker's naturally smooth response into large peaks and deep valleys.

Near-field listening avoids all those complications. Because you hear mainly the direct sound without reflections, the stereo image has remarkable clarity, focus, detail, and depth. In fact, the best two-speaker stereo imaging I ever heard was produced by near-field speakers. Their sound was astonishingly transparent, airy, and accurate, with pinpoint imaging, superb resolution of inner detail, impressive harmonic accuracy, and an ambient soundstage of startling clarity in both breadth and depth.

Since near-field listening minimizes the reflections and standing waves that normally produce large peaks and valleys at low frequencies, you tend to hear the smooth, gradual rolloff seen in laboratory response curves. The harmonic-overtone

The most important benefit of near-field listening is to virtually eliminate the influence of room acoustics.

likely to disturb your neighbors at night. And since the speakers are working only one-fifth as hard as they normally would, the back-and-forth excursion of each speaker diaphragm is much reduced. Consequently, the speaker's own distortion remains low.

The most important benefit of near-field listening is that it virtually eliminates the influence of every stereo system's largest component — the room and its acoustics. Near-field speakers, like headphones, deliver their sound directly to your ears with little or no contribution from room reflections. This is dramatically different from the conventional "far-field" setup, with

structures of instruments playing bass and lower-midrange fundamentals are reproduced with striking accuracy.

I must end with two bits of bad news. First, near-field listening is solitary. Only one person can occupy the "sweet spot" where the two speakers and your head form an equilateral triangle. Second, most speakers are designed to sound good from about 9 feet away, making their treble output much too strong at a distance of only 2 or 3 feet. Good near-field speakers are not easy to find; you may need to use tone controls, a tweeter-level control, or an equalizer to tame excess brightness. Good hunting! □

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