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MAKING SPEAKER CONNECTIONS

SPEAKER TESTS Boston Acoustics, Dahlquist, DCM, JBL, Paradigm, Philips



Stereo Review



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DIONEER The Art of Entertainment

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Cover

Some of the latest options in loudspeaker systems include the Paradigm Phantom, Dahlquist DQ-16, DCM CX-07, Boston Acoustics SubSat7. Philips DSS930, and the JBL PS120 powered subwoofer. For details see test reports beginning on page 28.

Photograph by Jook P. Leung

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Stereo Review.

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Home TheaterU Extra channels plus extra speakers equal higher fidelity . . . or do they? • by Ian G. Masters

35 Years of

 Tape Recording

 Tape tells a tale of technological

 progress in STEREO REVIEW's first

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Showstoppers

Hot new products from the 1993 Summer Consumer Electronics Show • by Bob Ankosko

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Million and Million

BY WILLIAM LIVINGSTONE AND BOB ANKOSKO



consumers, according to its

president, Lew Warren, Dues

are \$35 a year, and members

The Home Theater Industry

newsletter. The IHTA is at

Riverside, CA 92504-3946.

Association (HTIA) was

launched "to promote home

theater to the widest possible

audience through shows and

educational programs for

retailers and consumers,"

acting executive director.

The association hopes to

begin sponsoring shows as

according to Ken Furst,

early as this fall.

MUSICAL NOTES

The U.S. Postal Service.

of Elvis Presley fans by

version of it with his full

name. Other musicians

Bill Haley, Buddy Holly,

Clyde McPhatter, Otis

which gladdened the hearts

issuing an Elvis stamp last

featured on new American

stamps are Hank Williams,

January, has released a new

receive a monthly

3736 San Rafael Way,

HAWKING HOME THEATER

KULLF

New-home construction is so competitive in Orlando. Florida, that to attract buyers D. R. Horton, a Texas-based contractor, began including a complete A/V surround system in the standard package for select homes. The system, offered in houses priced from \$95,000 to \$150,000, includes four MTX in-wall speakers (mounted in the family room), an MTX center-channel speaker, a 27inch Goldstar TV, an SSI surround processor, and a choice between an MTX Soundcraftsmen amplifier and SSI's Powerflex III amp. The cost of the system, valued at \$3,000, can be amortized over the life of the mortgage.

Two home-theater organizations have recently been formed. The International Home Theater Association (IHTA) was established to provide an "information exchange" for

CES NIXES CONSUMER DAY

Despite a one-day turnout of 37,694 consumers at the Summer Consumer Electronics Show held in June in Chicago, the Electronic Industries Association (EIA), sponsor of the show, has decided to drop Consumer Day from next year's summer event. A survey of exhibitors and retail buyers revealed that most favored a trade-only show. On the bright side, the EIA says the public may still be admitted to high-end audio exhibits next year. . . In other news, the EIA reported that combined sales of consumer home and car audio products will top \$10 billion for the first time this year, giving audio a solid 25-percent chunk of the domestic consumer electronics ple, which includes video and home-information products.

DIGITAL DEVELOPMENTS

Deutsche Grammophon has announced its development of 4-D audio technology, an upgraded method of digital recording and mixing that uses 21-bit analog-to-digital conversion and other refinements. DG's first 4-D release in the United States is the violinist Gil Shaham's performance of concertos by Sibelius and Tchaikovsky with the Philharmonia Orchestra conducted by Giuseppe Sinopoli. Other 4-D recordings will follow this year, and soon all new DG releases will be made with 4-D technology.

Redding, Ritchie Valens, and Dinah Washington. . . . The annual Fujitsu Jazz Festival in Concord, California, celebrated its twenty-fifth anniversary this summer. . . . The new tenth edition of the Merriam-Webster Collegiate dictionary includes the word "karaoke," which refers to the equipment for providing recorded instrumental accompaniment for live amateur singers. The dictionary lists the origin of the term as the Japanese words for "empty orchestra."

'TIS THE TIME

Philips and Panasonic have announced that the running time of their new portable Digital Compact Cassette (DCC) players has been extended to 21/2 hours, up from 2 hours, when powered by their internal rechargeable batteries and playing digital cassettes. Playback time jumps to 4 hours with analog cassettes. . . . Sony recently began shipping the first 74minute recordable MiniDisc (MDW-74, \$16.99) to stores nationwide. Its 60-minute counterpart lists for \$13.99.

BATTERIES INCLUDED

Under a new state law, the first of its kind, New Jersey stores that sell NiCd batteries—used in portable audio players—must provide a way to safely dispose of spent batteries. Through the Portable Rechargeable Battery Association, the industry has set up a disposal system that includes in-store collection bins....Saft America is also supplying bins to retailers nationwide to collect its Again & Again rechargeable batteries.

CLOSED CAPTIONING

Circuitry to display closed captioning for the hearingimpaired is now required on all new U.S. TV sets with screens 13 inches or larger (whether made in America or imported). For information about add-on decoders to equip older sets for closed captioning, contact your local chapter of SHHH (Self Help for the Hard of Hearing) or the National Captioning Institute at 1-800-321-8337.

NEW ANTHEM

Anthem! America of Raleigh. North Carolina, has announced that the winning entry in its contest to find a new and original U.S. national anthem is America, My America, with music by Jerry Williams of Greensburg, Indiana, and lyrics by Dave Vest and Glenn Warren, of Hendersonville, Tennessee. The team of Williams, Vest, and Warren will receive the grand prize of \$1 million. **Eventually Anthem! America** will petition Congress to ac pt America, My America as the new national anthem.

A recording of America, My America and eleven other finalists is available on cassette from Anthem! America for \$11.25 postpaid. To order call 1-800-949-2684.

3 Loser \$	
	See Details Below.



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See Details B	el	ow.
Cool World	+	1084706
Forever Young		1104306
Howard's End		1102805
Paul McCartney's		
"Get Back"		0234708
Basic InstInct	*	1033208
Death Becomes Her	*	1071505
The Last Of The Mohicans (1992)	*	1071406
A League Of Their Own		1078005
Madonna: Truth Or Dare		0232900
Passenger 57	*	1087709
Sneakers	*	1071604
The Godfather		0000802
The Godfather: Part III		0842302
Dune		0211102
Home Alone		0104208
My Cousin Vinny		1033109
The Blues Brothers		0211706
The Last Boy Scout		0779108
Goodfellas		0969808
Back To The Future		0211409
Back To The Future Part II		0921304
Back To The Future Part III		0497008
Far And Away		1046507
Buga Bunny Classics		0297705
Field Of Dreams		0920306
The Prince Of Tides	+	0847103
New Jack City		0971507
Boomerang		1064005
Fried Green Tomatoes		1005404
The Bible		0074708
Conan The Barbarlan		0220509
The Wizard Of Oz		0001404
Terminator 2: Judgment Day		0203205
Universal Soldier	-	1059104
The Sound Of Music		0003905
The Silence Of The Lambs	-	08#5309
Die Hard		0367607
Die Hard 2		0041806
The Hunt For Red October	+	0825000
The Abyss	*	0841102
Backdraft		0559005
Allen	-	0000208
Allens	_	0360909
Allen 3		1042506

Prince Of Thieves		0976803
Lethai Weapon		0630806
Lethal Weapon 2		0642702
Lethal Weapon 3		1051507
Star Trek: The Motion Picture		0203505
Star Trek II: The Wrath Of Khan		0201301
Star Trek III: The Search For Spock		0201608
Star Trek IV: The Voyage Home		0430603
Star Trek V: The Final Frontier		0448605
Star Trek VI: The Undiscovered Country		1001007
The Empire Of The Sun		0633206
Chinatown		0202507
Always		0921502
Fatel Attraction	_	0439307
National Lampoon's		
Animal House		0211508
It's A Wonderful Life 45th Anniversary Ed.		0392308
Jaws		0100008
North By Northwest	*	0844209
The Man Who Would Be King		0085803
Beverly Hills Cop		0205302
Beverly Hills Cop II		0431908
Bugsy		0853408
Casablanca	_	0050708
Henry V (1990)		0040303
Patton		0788703
Superman: The Movie	٠	0001305
The African Queen	_	0051102
Kindergarten Cop		0523407
Dangerous Lialsons		0638700
Blue Velvet	*	0515007
Hard To Kill		0953505
Road Warrior		0602805
Beetlejuice	_	0633008
American Graffiti		0211300
Harry Connick, Jr.: Singin' & Swingin'		0968107
All Dogs Go To Heaven		0289702
Chariots Of Fire		0601401
Under Siege		1077908
Predator		0364901
Predator 2		0104307
Ghost		0826008
2001: A Space Odyssey		0844308
Patriot Games		1051309
E.T.: The Extra-Terrestrial		0681106
Batman (1989)		0642504
Batman Returns	*	1029909
Scariace (1983)	-	0216804
Hook		0854307
Lawnmower Man		1014505

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CTC Storeo Roview is published IDCS by Hachette Filipacchi Magazines, Inc

Chairman: Daniel Filipacchi President, CEO, and COO: David J. Pecker Executive VP and Editorial Director: Jean-Louis Ginibre Senior VP, Global Advertising: Paul DuCharme Senior VP, Director of Corporate Sales: Nicholas Matarazzo VP, Director of Strategic Planning, Advertising, & Circulation: Patrice Listfield VP, Chief Financial Officer: Paul DeBenedictis VP, General Counsel: Catherine Flickinger VP, Manufacturing & Distribution: Anthony Romano VP, Circulation: Leon Rosenfield VP, Research & Marketing Services, Susan Smollens VP, Communications & Special Projects. Keith Estabrook

LETTERS

A/V Additions

avid Ranada's "Choosing an A/V Receiver" in July was very comprehensive, and together with Daniel Kumin's "Add-On Surround Sound" in the same issue it provided most of what anyone contemplating upgrading from an audio-only system needs to know. The one important omission was any discussion of satellite TV, or TVRO, a rich source of Dolby Surround-encoded soundtracks on many cable channels. It's an excellent audio-only source, too, especially for people whose FM reception is poor or nonexistent.

Also, there are some other features I would advise looking for in an A/V receiver: (1) independent control of audio and video sources for use with PIP (picture-in-picture) systems that don't offer the PIP as an audio source—a good way to deal with having two favorite football teams playing in different cities at the same time, (2) simulcast-style video recording, (3) nonvolatile memory so favorite settings don't vanish during power blackouts, (4) facilities for remote-control operation outside the main "listening" room, (5) quickview/flashback/recall for jumping back and forth between two preferred settings.

One last point: No matter how many video inputs you think you need, get more. Direct Broadcast Satellite and digital TV will be here before your new A/V receiver is ready to retire. VERNON TONNESEN Spring Hill, FL

Add-On Add-Ins

Why did Daniel Kumin leave so many products out of "Add-On Surround Sound" in July? I own the Paramount Pictures FX3300, which is a U.S.-made processor comparable to the AudioSource SS-3/II shown on the first two pages of the article. Surround Sound. Inc. (SSI), Audiofile, and Cambridge SoundWorks also make processors.

> WILLIAM A. MENDOZA Tallahassee, FL

Mr. Kumin cited specific models only to give a feeling for what's available. In selecting photos to illustrate an article, the editors strive to show a representive sampling of components with different features in different price ranges.

Jerky Movies II

Ralph Hodges was fully correct in describing the stop-start jerks during the projection of movie film and the need to smooth out this motion for correct playback of the soundtrack (May, "The High End"). Reader Mel Young's description in July "Letters" is only partly correct: All of the sprockets in a movie projector move at a constant speed *except* the one directly below the aperture, which is known as "the intermittent sprocket." Its pur-

6 STEREO REVIEW SEPTEMBER 1993

pose is to start and stop the film twenty-four times every second to synchronize with the opening and closing of the shutter. Each frame of film must be projected as a still picture or the resulting "moving" image would be hopelessly blurred. KARL STRALEY Huntington Beach, CA

Other readers who corrected Mr. Young's "correction" include Joseph Antczak, Frank Smathers, David M. Huskinson, Christopher Lwowski, Max Carter, David Woodman, Richard H. Bush, Kent Ingram, Mark A. Willke, and Walter V. Peirson.

Finding MiniDiscs

recently won a MiniDisc recorder/player from a local radio station. Where can I find blank and prerecorded MD's? RICK KOWAL Novi, MI

Sony and TDK blank MD's are available at dealers selling MD equipment and at some record stores, and prerecorded MD's from more than twenty major and independent labels are in some large record stores and chains such as Musicland, Rose Records, Sam Goody, and Tower Records. A free catalog of nearly 300 prerecorded MD's will be in stores this fall.

Buyer, Beware

Charles Rodrigues's cannon—all things that supposedly knowledgeable car stereo dealers tell their customers:

• Mount your woofers on the small end of the enclosure so the bass "wraps" around the box better. That's why tube designs sound better than rectangular boxes.

• Seal the woofer box no matter what the manufacturer recommends.

• If you don't have 4-ohm woofers, *don't* seal the box no matter what the manufacturer recommends.

• Buy 8-ohm woofers—the bass carries better outside the car.

• Speaker wire that's too large drains power from the amplifier.

• Line converters convert megawatts coming from the deck into milliwatts that the amplifier can use.

• Turning down the bass control on a car stereo system increases distortion.

• If you want more than one woofer, buy 4ohm woofers and hook them up in series.

• Use 8-gauge (or larger) power cable regardless of what the amplifiers actually draw, but the ground wire can be anything.

• Putting a hole (port) in a woofer box, regardless of its size or shape, increases the bass output.

• Never put a hole (port) in a box—it decreases the bass output.

• It's better to buy a small multichannel am-



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year of tenure on their American Express and Optima Card accounts who spent at least \$1,000 on the Optima Card during the review period qualify for an APR that's currently 12.00% for purchases The Wall Street Journal. The annual fee for the Optima Card is \$15 (\$25 for non-American Express® Cardmembers). For more information or to apply call 1-800-OPTIMA-6. © 1993 American Express Centurion Bank. plifier and bridge all the channels than to buy one large amplifier to drive the woofer(s).

• The big-name amplifier builders under-rate their amps by a factor of three or four.

• The greater the oversampling in a car CD player, the more skip-resistant it will be.

• Because of their oval shape, 6 x 9-inch speakers always produce more distortion than round speakers.

• "Peak power" is real—it just gets measured in different ways.

• There really are 4-inch subwoofers.

• Subwoofers for a car are totally different from subwoofers for home use.

• Crossovers shouldn't be used with subwoofers—they reduce the bass.

VERN MASTEL. Team Electronics Sales Bismarck, ND

Goosebumps

n July's "The High End," Ralph Hodges explores the ability of high-end audio to create so convincing an illusion that the listener gets goosebumps. Only toward the end of the column does he finally get around to mentioning music. But of all the aspects of reproduced music that affect the listener's reactions, the most idiosyncratic is the music itself. I find many of the recordings favored by high-end audiophiles to be superlative in sound quality but not all that interesting musically—I've never gotten goosebumps from hearing them, even on high-end systems. On the other hand. I can recall feeling goosebumps several times while listening to particularly interesting music, even when the sound was less than superlative. ALLEN WATSON Sunnyvale, CA

The goosebump phenomenon, or GBP, is not a product of the electronics alone. A combination of factors is involved, including the system, the room, the weather, the listener's state of mind, and the right recording.

Over the years I have acquired a handful of recordings that can occasionally raise the hairs on the back of my neck: Leonard Bernstein and the L.A. Philharmonic in *Rhapsody in Blue*. André Previn and the Pittsburgh Symphony in Saint-Saëns's *Carnival of the Animals*, Billy Joel's "The Bridge." Bernstein again with the New York Philharmonic in an analog LP of Holst's *The Planets*, the CD of the Beatles' "Sgt. Pepper." parts of Peter Gabriel's "Security." and Jesús López-Cobos and the Cincinnati Symphony in Bizet's *Carmen* suite. Any regular readers of this magazine probably have their own lists of such recordings.

The desire to assemble the perfect system is the goal of every audiophile—a desire driven, 1 believe, by our having experienced the goosebump phenomenon at least once, becoming addicted to it, and hoping to create a system that will enable all of our recordings to affect us in the same way that a few, on a few occasions, have. TIMOTHY D. SHEA Shawnee, KS

No Laughing Matter

Your sarcastic coverage of Jim Gordon's Grammy Award in July "Music Makers" was cruel, tasteless, and inexcusable. Millions of Americans suffer from mental illness, some of them gifted artists like Jim Gordon. It is a tragedy that we don't have better ways of treating mental illness. One obstacle to better treatment is the widespread, primitive view of it you displayed. There is certainly room for humor in STEREO REVIEW, but in this instance you weren't funny—you were offensive and mean. GARY CHAPMAN Somerville, MA

Steve Simels replies: The Jim Gordon story was an attempt at black comedy that obviously misfired. I apologize for having offended anyone, which was certainly not my intention.

Correction

Sharp's MD-D10 portable MiniDisc player was incorrectly identified as a player/recorder in July's "Portable CD," page 73.

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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TIME DELAY



35 Years Ago

In the "HiFi Soundings" column in the September 1958 issue, Managing Editor David Hall pondered the question, "Are Stereo Discs Hi-Fi?" His optimistic conclusion: "We have every reason to believe that the challenge to produce truly clean stereo sound on disc, though it will take time and further development, will be met and met brilliantly."

Equipment tested this month included the Allied Knight-Kit 25-watt power amplifier (\$50), which the editors rated "one of



the best-designed kits to grace our sound room in a long time," the Vantron Pow-R-Check, which measured amplifier output ("If you want to impress your friends, this is it"), and the Scott Model 300 AM/FM tuner, whose dial was described as "sufficiently simple to overcome the objections of the most non-hi-fi conscious housewife." Back to Mono: In his column, "The Flip Side," Editor Oliver P. Ferrell, "at the risk of being classified a heretic," warned, "One of the major feature articles in the next issue will discuss monaural equipment!"



20 Years Ago

A real people person: In his editorial, William Anderson noted that "One of the good things about being an editor is the people you get to work with. Come to think of it, that's one of the bad things, too."

In Best of the Month, Music Editor James Goodfriend raved about a Nonesuch disc of Gershwin's solo-piano music by William Bolcom ("I would say he plays like Gershwin himself, but better"). Eric Salzman was equally excited about another Nonesuch disc, twentiethcentury American chamber music played by the Composers Quartet ("One listens to the music, not to the struggle of the performers to play it"). And Chris Albertson, reviewing the first of a projected series of previously unreleased live recordings by Art Tatum, predicted that the series would "surpass in importance even the historic Fifties release of Benny Goodman's famous 1938 Carnegie Hall concert."

Elsewhere in the review sections, Peter Reilly described Tony Bennett's "Listen Easy" as "an

experience in total something. What, I'm not quite sure.' George Jellinek equivocated on the merits of London's disc of Mefistofele highlights featuring Giuseppe di Stefano ("An artist whose superlative gifts abandoned him much too soon-or was it the other way around?"). And Lester Bangs, reviewing Alice Cooper's "Billion Dollar Babies," described the group as "the Burton-Taylor of rock-except that, unlike Liz and Dick, they haven't had a bomb yet."

New products this month included the Hear-Muff stereo headphones, billed as "the first headphones designed specifically for comfort while reclining," HR's Control One automatic power switcher, which turned off audio equipment "after 10 minutes of non-use," and the Dual Model 701 direct-drive turntable (\$350), whose tonearm counterweight had mechanical filters to damp any resonance from the arm-cartridge interaction. In test reports. Julian Hirsch put the Pilot Model 254 AM/FM receiver through its paces, concluding, "We could not fault this fine receiver in any respect."

Zelig Lives! Reviewing an American Bandstand tribute LP, "20 Years of Rock 'n' Roll," Noel Coppage observed, "Small wonder that millions of young people came to admire if not idolize Dick Clark; he 'was' whatever they thought he was."

10 Years Ago

Letters to the Editor: Reader Rich Phillips of Columbia, South Carolina, incensed over Mark Peel's review of Bryan Adams's "Cuts Like a Knife,"



wrote us that "I will read Mr. Peel's reviews in the future because I know that if he pans an album, it's a safe bet the album is good."



Reporting from the Summer Consumer Electronics Show. E. Brad Meyer attributed a new mood of optimism in the audio industry to the burgeoning CD revolution. "The possibility of delivering audibly perfect replicas of original master tapes," he noted, "seems to have everybody thinking new thoughts." New products that caught his eve at the show included the Marantz SR430 receiver with CD and video inputs, Revox's B261 FM tuner (\$1,500), and Surround Sound's M-360 decoder for videotapes with four-channel soundtracks.

So Rich Phillips bought it immediately: Reviewing "Too Low for Zero," Elton John's latest album with lyricist Bernie Taupin, Mark Peel declared that "The Abbott and Costello of rock are back, and their return is a reminder of why it was so easy to let them go in the first place." —Steve Simels



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NEW PRODUCTS



A RCA

Part of RCA's new Home Theater Audio series, the RV3761F A/V receiver features a six-mode Dolby Pro Logic decoder and six DSP-derived surround settings, including one for movies. It has four video and five audio inputs and can deliver 60 watts each to front left, center, and right speakers and 25 watts each to two front surrounds and two rear surrounds. Price: \$899. Thomson Consumer Electronics, Dept. SR, 600 N. Sherman Dr., Indianapolis, IN 46201-2598. • Circle 121 on reader service card



APPLE COMPUTER

The PowerCD from Apple is a CD-ROM drive for its current Macintosh computers that plays music CD's, Photo CD's, and CD-ROM discs. It has a port for connection to the computer, or it can be connected to a TV for Photo CD viewing or a stereo system for CD playback. A remote control is included. Price: \$499. Apple Computer, Dept. SR, 20525 Mariani Ave., Cupertino, CA 95014.

Circle 123 on reader service card

INFINITY

The Kappa 8.1 speaker is the flagship of Infinity's Kappa Series. The 48¼-inch-tall oakveneer cabinet houses an EMIT-R planar-magnetic tweeter, a Polydome midrange, a 6½-inch midrange-woofer, and a 12-inch woofer. Frequency response is given as 32 to 35 kHz ± 2 dB. Price: \$1,100. Infinity, Dept. SR, 9409 Owensmouth Ave., Chatsworth, CA 91311.

Circle 120 on reader service card



SNELL

Snell's EC-300 crossover is a three-channel electronic device with an 80-Hz cutoff point. It has 12-dB-per-octave high-pass filters for the left, center, and right speakers, a 24-dB-per-octave low-pass filter for the subwoofer, and a front-panel Cinema Compensation switch to improve video soundtracks with exaggerated highs. Price: \$299. Snell, Dept. SR, 143 Essex St., Haverhill, MA 01832. • Circle 122 on reader service card



NEW PRODUCTS

TDK

TDK's MD-XG recordable MiniDisc is available in two lengths: 60 minutes (shown, \$13.99) and 74 minutes (\$17.49). Both are housed in a clear cartridge that is said to be resistant to heat and shock. TDK, Dept. SR, 12 Harbor Park Dr., Port Washington, NY 11050.

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McINTOSH

McIntosh's C712 preamplifier offers eight inputs, including two tape loops and a signal-processor loop, and balanced outputs in a low-profile 3%-inch-high chassis. It features logic-driven electromagnetic switching, bass

and treble controls that provide a 12-dB boost or cut, and a front-panel headphone jack. Price: \$1,300. McIntosh, Dept. SR, 2 Chambers St., Binghamton, NY 13903-2699. • Circle 126 on reader service card





CAMBRIDGE SOUNDWORKS

Cambridge SoundWorks' Model Six speaker combines an 8-inch woofer and an 1¾-inch tweeter in a 18¼-inch-tall cabinet. Critical damping and a relatively low inbox resonant frequency are said to enable the Model Six to achieve output down to about 40

Hz with no peaks in the upperbass region. Available by mail order for \$119 plus shipping with a thirty-day money-back guarantee. Cambridge SoundWorks, Dept. SR, 154 California St., Newton MA 02158. • Circle 125 on reader service card





ALPINE

Alpine's Model 7805 car CD receiver features a detachable faceplate, controls for a six-disc CD changer, preamp outputs, and an AM/FM tuner with an automemory mode that scans the radio band and automatically stores the strongest stations in numbered presets. Maximum output is 25 watts per channel. Price: \$480. Alpine, Dept. SR, 19145 Gramercy Pl., Torrance, CA 90501.

Circle 127 on reader service card



SIEMENS

The Circuit Breaker/Surge Arrester from Siemens protects a home's electrical circuitry—and electronic components—from lightning strikes and voltage surges. The device is installed in the circuit-breaker panel of the

main electrical box like a conventional breaker. Installation by an electrician is recommended. Price: \$75. Siemens, Dept. SR, P.O. Box 2407, Norcross, GA 30091-9828. • Circle 128 on reader service card



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PANASONIC

Panasonic's CQ-DC1 car DCC tuner plays both analog tapes and Digital Compact Cassettes and has a large, twelve-character LCD panel for song titles and other information encoded on prerecorded DCC's. The deck has a detachable faceplate, controls for a CD changer, and a wireless remote control. Price: about \$1,000. Panasonic, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.

Circle 130 on reader service card



PROGRESSIVE DESIGNS

Progressive Designs' 70-inch-tall Hex 100 Tower holds 100 CD's in spring-loaded slots. Available by mail order in black or medium oak for \$130 plus \$18 shipping. Progressive Design Products, Dept. SR, 310 County Line Rd., Bensenville, IL 60106.

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ALLISON

Allison's home-theater-oriented MS Series comprises the 10-inchtall MS-200 two-way satellite (\$260 a pair), the 19-inch-wide MS-202 center-channel speaker (\$180), and the MS-W4 11-inchcube bass module (\$210), which has a low-frequency limit of 40 Hz. All are finished in black lacquer, magnetically shielded, and covered by a full five-year warranty. A gray vinyl finish is also available. Allison Acoustics, Dept. SR, 478 Stanford Ave., Danville, KY 40422.

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BY ROBERT RIPPS, MARYANN SALTSER, AND STEVE SIMELS

AT LAST-THE FRENCH ATONE FOR THAT AWARD TO JERRY LEWIS!!

Looks like history is repeating itself for legendary New York rocker Willy DeVille. Back in 1980, you'll recall, his album "Le Chat Bleu" was released only in Europe, whereupon it sold close to half a million copies and garnered such rave reviews in the States that Capitol Records (his home at the time) was ultimately shamed into releasing it domestically. Now DeVille's latest effort, "Backstreets of Desire," on the French label FNAC. is doing similar European business. Consequently, America, where DeVille is currently label-less, is calling once again. with several companies, including Ryko and Relativity.



interested in releasing it over here ASAP. Guests on "Backstreets of Desire" include zydeco maven Zachary Richard. Steely Dan guitarist Jeff "Skunk" Baxter. Dr. John, and David Hidalgo of Los Lobos. Among the album's high points is a neo-Mariachi version of the venerable *Hey Joe*.

Meanwhile, DeVille's first three albums, all must-haves, are finally out on CD thanks to Era Records, a new reissue subsidiary of K-Tel.



HEART AND SEOUL

The twenty-two-year-old Korean violinist Chee-Yun made an impressive recording debut on Denon last March with "Vocalise," a collection including works by Rachmaninoff, Sarasate, and Bernstein. Denon plans to release a second Chee-Yun CD in October, this one featuring sonatas by Saint-Saëns, Debussy, and Fauré. Recorded this past May in New York City, it is only the third recording Japan-based Denon has made in the U.S.

A winner of the Young Concert Artists International auditions when she was eighteen, Chee-Yun was awarded the prestigious Avery Fisher Career Grant a year later. This summer she joined the Mostly Mozart Orchestra on its tour of Japan.

BRONFMAN REMEMBERS LENNY

The Russian-born pianist Yefim Bronfman is one of many distinguished artists and former F.O.B.'s, or Friends of Bernstein, who's taking part in a commemoration of the composer, conductor, and educator on August 25 (which would have been his seventy-fifth birthday) at Alice Tully Hall In New York City. The concert will air on the Arts & Entertainment cable network on September 9.

Bronfman's other activities this summer include a Salzburg Festival debut, appearances at Ravinia (August 18) and the Hollywood Bowl (August 24) with the Israel Philharmonic, and one in Saratoga, New York, with the Philadelphia Orchestra (August 20). His latest Sony recordings are the Prokofiev Piano Concertos Nos. 1, 3, and 5 with the Israel Philharmonic and Zubin Mehta (released in June) and the Brahms Violin Sonatas with Isaac Stern (just out).

BIG STAR LIVES!

That sniffling you hear throughout the world of Alternative Rock is the result of tears of joy. No. Steve Albini is not producing Garth Brooks. Rather, Big Star-who were to many members of Generation X what the Beatles were to the Baby Boomers-has reunited for a concert and live album. The influential early-Seventies band (pictured, right, in 1972) got back together April 25 for a show at the University of Missouri, with Ken Stringfellow and Jon Auer of the Posies joining founding members Alex Chilton and Jody Stephens. Our spies tell us the music was transplendent, and since Zoo Records taped it you'll be able to hear for yourself any day now.



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MUSIC MAKERS

WHILE ELIJAH BLUE LANGUISHES WITHOUT A RECORD DEAL

Latest rock band to feature an elder rocker's kid: Ceremony, whose album "Hang Out Your Poetry" is just out on Geffen. The kid is Chastity Bono, daughter of



who and familiar to TV viewers from her folks' early Seventies variety show. Asked what she got from her mom, the younger Bono turns out to have a sense of humor. "I'd have to say my voice," she says. "Thank God I got hers and not my father's."

> Guitarist David Starobin



ADVENTURES IN AUTO SAFETY

The following is an honest-to-God true story. In March of 1992, Who lead singer Roger Daltrey and big-time producer Bob Ezrin (Pink Floyd, Peter Gabriel) were leaving a New York studio when their limo ran—literally—into a young musician and Who fan. "Where does it hurt?" asked Daltrey. "In my demo," replied the youngster, handing Daltrey a tape. Daltrey listened to the cassette—the work of an unknown New York band called the Raw Poets--and flipped. He and Ezrin went on to produce an album's worth of stuff with the group, who then won Best Unsigned Band at the '92 New York Music Awards. The Poets, whose music Daltrey describes as sounding "like early Kinks or young Lennon-McCartney," are currently gigging around Manhattan and expect to have a record deal and an album out momentarily. There's a moral to all this, but for the life of us we can't think of what it is.

MUSICAL CHAIR

David Starobin has been named to the Andrés Segovia Chair at the Manhattan School of Music, where he will head the Classical Guitar department beginning this September. The fortyyear-old guitarist founded Bridge Records and still manages the company in partnership with his wife. Becky. New Bridge releases planned for this year include "The Great Regondi. Volume One." which features recently discovered works by the nineteenth-century guitarist Giulio Regondi, and Volume Five of Starobin's own award-winning series. "New Music with Gui-Earlier this year the tar.' Belgian label GHA (distributed by Qualiton Imports) released a Starobin collection, "Romantic Guitar." featuring works by Fernando Sor and the aforementioned Regondi.

CHAMBER MUSIC'S SILVER ANNIVERSARY AT LINCOLN CENTER

The 25th Anniversary Season of the Chamber Music Society of Lincoln Center, under the artistic direction of the clarinetist David Shifrin, kicks off with a gala performance on October 20 that will be telecast as part of PBS's Live from Lincoln Center series. Shifrin will be joined by his



HARRY HELEOTIS/M.L. FALCONE

society colleagues Robert Routch (horn), Ani Kavafian and Joseph Silverstein (violin). Paul Neubauer (viola), and Gary Hoffman (cello) in a program that features a world première of a Chamber Music Society commission-John Corigliano's Fanfare for Four Trumpets, Three Horns, Two Tenor Trombones. Bass Trombone, and Tuba (quite a mouthful!). Guest artists will be the American Brass Quintet, the Meridian Arts Ensemble, and the pianist André Watts, a guest member of the society this season. Delos recently announced plans to 2 record performances by the

society, and the first disc will

be released in October.

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Doubling Up Speakers

I would like to use two sets of front speakers with my A/V receiver, but I have been told two pairs could be too demanding on the receiver. The owner's manual briefly discusses hooking up speakers to both the A and B terminals, but it doesn't mention any cautions in doing so. What's the story? MIKE WOODS Fort Worth, TX

The effect of adding speakers really has to do with how the receiver manufacturer has wired up the A and B terminals. Except for multichannel A/V receivers, the speaker terminals are often simply wired together in parallel behind the panel. When more than one set of speakers is used, the total impedance drops and the current drain on the output stages increases. If the increase is great enough, amplifier damage could result. Check the rated impedance of both sets of speakers. If both are 8 ohms, then you shouldn't have any problem—most receivers can handle a 4-ohm load, which is what you get when two 8-ohm speakers are wired in parallel.

Increasingly, however, one finds receivers with the outputs wired in series so that the impedances of the speakers add together, raising the total value rather than lowering it. Although that protects the amplifier, it may cause significant response errors when both pairs are in use, degrading sound quality, and it will reduce the receiver's power output.

Tape Deck Implant

The tape mechanism in the cassette receiver I bought less than a year ago malfunctions, and two separate service facilities have been unable to fix it. My classical music tapes are painful to listen to on this machine, but they sound fine on my \$30 portable cassette player. Would it be worthwhile to wire my portable into the receiver somehow? If so, how would I do it? KARYN MICHAEL Seattle. WA

The hookup is simple enough. If your player has line outputs (RCA jacks), simply plug one end of a stereo cable into the player and the other into any high-level input (aux, CD, tape) on your receiver. If, as is more likely, the player provides only a headphone output, it's a simple matter to buy an adaptor cable with a stereo miniplug on one end and a pair of RCA plugs on the other. With the level controls on both the player and receiver at their lowest settings, plug the cable into the headphone output of the player and the RCA plugs into a high-level input on your receiver. Switch the receiver's input to another source-FM, say-and turn the level up to a comfortable volume. Then select the input you have connected your portable player to and gradually increase its level (with a tape playing) until it roughly matches the level of the other source. Note the position of the player's level control for future use.

Peace in the Neighborhood

I like my music quite loud, but that disturbs my neighbors on the other side of the wall. Twe been told that there are materials available that will soundproof my room. What's the best way of going about this without sacrificing the sound quality of the room itself? LAMES G. BARONE

Sharon, PA

A There are no easy fixes. The only way to keep your sound to yourself is to supplement the wall between you and your neighbor, which shouldn't have any deleterious effect in your room but will make things quieter in his. High frequencies can be effectively absorbed by building a second wall separated from the present one by a space of at least a couple of inches, which might be stuffed with fiberglass insulation as well. Make sure there are no holes or gaps between the new wall and the existing floor, ceiling, and side walls.

Bass is much harder to contain because it requires mass—the sound will try to move the wall, to re-radiate on the other side: the heavier the wall, the more energy will be absorbed. Two or more layers of drywall should do the trick, unless you like to boom at World War III levels.

All of this might be in vain, however, if the sound can get *around* the wall rather than through it. In that case, you're probably in for headphones or fisticuffs.

Simulating Stereo

I have a number of cassettes that I recorded in mono to improve their noise performance. I would like to rerecord them in something as close to stereo as possible. Is there some type of equalizer or expander that will do this? I have also heard of devices that "synthesize" stereo. Would that help?

JEFF CLOPP Boonton, NJ

A Lassume you no longer have access to the original stereo material from which you made the recordings; if you did, the best bet would be to start over from, um, scratch. With today's tape formulations and the proper noise reduction, you should be able to make tapes quiet enough even for critical listening. If you're stuck with a mono source, though, any attempt to simulate stereo will be a compromise at best. Equalizers and expanders would be unsuitable for this, as they work on frequency response and dynamic range, respectively, rather than the stereo effect, but

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the stereo-synthesizing circuits of a few receivers may give a convincing sense of space on some material.

I have had some success simply playing mono recordings through ambience-enhancement surround circuits designed to simulate three-dimensional acoustic environments. The main channels remain in mono, of course, but the extra channels lend a satisfying feeling of depth that is, in fact, not unlike the acoustic effect of many large halls, where the direct sound is more or less mono anyway.

Whatever you do, it's probably best to do it in playback only, rather than making a new processed recording. That not only avoids an extra tape generation but also lets you experiment later with different effects (or simply stick with mono if, in the end, that's what sounds best).

Ambisonics Revisited

I have recently heard about a system called Ambisonics, but I haven't been able to find out anything about it. Is it a new, inexpensive form of surround sound or something else altogether? JUAN ALVES San Diego, CA

It's hardly new. Some two decades ago, a couple of British professors came up with a sophisticated method of including real, unsynthesized hall ambience in recordings. Others were attempting the same thing at the time, but instead of simply aiming four microphones at the corners of the hall, as others did, the inventors of Ambisonics came up with a technique of recording difference signals (left minus right, front minus rear) and an omnidirectional signal (left plus right plus front plus rear) and then algebraically deriving the correct signal for each speaker location. In theory, equations could be created for any speaker location and any number of speakers.

Unfortunately, although the system was enthusiastically received in some quarters, it was too late, and the audio industry moved on to other concerns. But the boom in surround sound seems to have revived interest in Ambisonics, and one or two manufacturers are making decoders for it. So far. only Nimbuswhich owns the rights to the technology-has an Ambisonics recording catalog of any size.

Vintage Four-Channel

I have an old four-channel receiver that includes such things as OS. SO, CD-4, Hall Surround, and several other features. Are any of these useful for reproducing today's surround-sound material? Or anything else? NOAH WILLIAMS, JR.

Fayetteville, NC

Unless you have a supply of recordings made in the old quadraphonic systems, the various decoders included in your receiver won't do you much good, as those old systems are incompatible with the surround sound of today. Try them out on conventional recordings, however-the old matrices (especially QS) were able to extract a lot of ambience from stereo recordings. The Hall Surround setting might be worthwhile, too; many of today's surround components also include

a "hall" mode that probably doesn't differ very much from what you have.

My guess, however, is that your receiver would be most useful because of its four channels of amplification, which can be reached by means of the four-channel tapemonitor loop. That would enable you to run an outboard surround decoder through the amplifier in the receiver.

Rapid-Fire Tape Deck

My cassette deck operates normally in the play mode, but when I press the record button, both level meters immediately register full level and my speakers emit a repeating, rapid-fire sound that resembles a machine gun. What's causing this problem? ALEX F. SOAVE Plainview, NY

It seems to be a classic case of feedback: Somehow you are feeding the output of your cassette deck back into its input, probably by misconnecting the cables at the amplifier or receiver end. Without knowing the specifics of your system, it's hard to say how it happened, but one possibility is that the output of the deck is connected to a high-level position on the regular input selector rather than to tape-monitor jacks. Whatever is wrong, it can easily damage your equipment and should be corrected immediately. Unplug all the cables relating to your cassette deck and start over, following the manufacturer's instructions to the letter. If you still have a problem after that, a service call will probably be necessary.

Power to the Strip

I would like to avoid the inconvenience of using up all my wall outlets powering stereo equipment and am considering a multipleoutlet power strip containing surge protection. Do these provide enough current to power an amplifier without damage? TRACY LEWIS Danville, VA

I've never found much value in surge protectors when it comes to audio, but maybe my friendly power company delivers a cleaner signal than others. Nevertheless, surge protection can do no harm, and power strips do have some benefits whether protected or not. One is neatness: Rather than running power cords all over the room to reach numerous wall outlets, having them terminate in one place is much tidier and possibly safer. Many strips also have a power switch, which may be useful as an on/off control.

As for capacity, all the power strips I have used could handle more than the amperage of a household circuit, so if all your equipment is now fed from outlets regulated by the same fuse or breaker, there's no reason not to use a strip. If there's a problem, it should blow the fuse long before there's any damage to your equipment.

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

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IF?I KFAIR



Paradigm Phantom Loudspeaker System RSCH-HOUCK LABORATORIES

HE Canadian-made Paradigm Phantom loudspeaker is similar in basic design to the company's Titan system (reviewed here in September 1992), but with somewhat larger drivers in a larger cabinet. Its 8-inch woofer, constructed on a die-cast aluminum frame, operates in a vented enclosure whose port is on the back of the cabinet. Except for its size and basket construction, the woofer appears to be generally similar to that of the Titan.

There is a second-order (12-dB-peroctave) crossover at 2.5 kHz to a 3/4inch dome tweeter with magnetic-fluid damping and cooling. Although this tweeter is the same nominal size as the Titan's, it is formed of a different material (treated textile instead of polyamide) and operates at a lower crossover frequency. Paradigm says the Phantom tweeter's design gives it better damping and power handling.

The Phantom's cabinet has more than twice the volume of the Titan's (0.93 versus 0.38 cubic foot). This difference probably accounts in large measure for the Phantom's somewhat higher sensitivity rating (90 dB soundpressure level versus 88 dB) and appreciably deeper low-frequency extension. Its on-axis response is specified as 60 Hz to 20 kHz \pm 2 dB.

The Paradigm Phantom's input ter-



minals are spring-type clips that accept only stripped wire ends. They are recessed into the cabinet's rear panel. The enclosure's beveled front is covered by a nonremovable black cloth grille.

We supported the Paradigm Phantoms on 26-inch stands, several feet from any room walls. Their averaged room response was possibly the flattest we have yet measured from a loudspeaker, varying $\pm 2.5 \, dB$ from 47 Hz to 20 kHz and a remarkable ± 1.2 dB from 1.1 to 11.5 kHz. There was a modest 5-dB peak between 13 and 15 kHz, apparently from the tweeter's diaphragm resonance.

Quasi-anechoic MLS response measurements confirmed the exceptional smoothness of the Phantom's response. Although the specific features of the response curve differed slightly with microphone placement, its variations did not exceed 5 dB overall between 300 Hz and 11 kHz. and most of those were traceable to unavoidable reflections within the room.

The horizontal dispersion of the Phantom was also surprising, with less than a 2-dB level difference between the on-axis and 45-degree off-axis measurements up to 8 kHz; the difference increased to only 3 dB at 10 kHz and 8 dB at 20 kHz.

The minimum impedance of 5.6 ohms occurred at 30 and 130 Hz. There were impedance peaks to 20 ohms at 12 Hz, 30 ohms at 60 Hz, and 47 ohms at 2.2 kHz. Group delay, a measure of phase linearity, was virtually constant over the tweeter's range, varying less than ±50 microseconds from 4 to 20 kHz and about 1.2 milliseconds from 50 Hz to 4 kHz.

Sensitivity was almost exactly as rated-91 dB sound-pressure level (SPL) at 1 meter with a 2.83-volt input of pink noise. We measured the woofer distortion at a constant drive level of 2.53 volts (corresponding to 90 dB SPL in our sensitivity measurement). The distortion was between 0.5 and 1 percent from 2 kHz to 100 Hz and less than 2 percent down to 40 Hz, but it reached 10 percent at 20 Hz. Listening tests confirmed that the Phantom's actual low-frequency limit was in the

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TEST REPORTS

The smoothness of the Paradigm Phantom loudspeaker's frequency response would do justice to speakers at ten times its price.

vicinity of 30 Hz, where the output was audibly clean although somewhat down in level.

Pulse power tests showed that the Phantom was able to absorb a considerable amount of power without damage or (usually) unreasonably high distortion. With single-cycle 1- and 10kHz bursts the driving amplifier clipped at 330 and 600 watts, respectively, without any obvious signs of distress from the speaker. At 100 Hz, where almost any speaker can be overdriven by most amplifiers, the Phantom's woofer reached its suspension limits noisily (but without damage) at a 225-watt input level.

These measurements would suggest that the Paradigm Phantom is a remarkably good speaker in its price range and would be very competitive at a substantially higher price. The considerable listening time we devoted to it confirmed that impression. It is exceedingly rare to find speakers selling for well under \$300 a pair that can deliver any sort of useful output at 30 Hz, to say nothing of having a response smoothness that would do justice to speakers at ten times that price.

From a purely sonic standpoint, the Paradigm Phantom is unquestionably an outstanding value. In our opinion, it sounded as good as its measurements imply it should. At its price, you do not get real binding-post connectors or a wood-veneer cabinet, and our samples, which had a simulated black-ash finish, would never be mistaken for fine furniture. On the other hand, no one hearing them in a blind test (not knowing what he was hearing) would be likely to guess that he was listening to a \$289 pair of speakers.



Dahlquist DQ-16 Loudspeaker System

S INCE their beginnings some twenty years ago, Dahlquist loudspeakers have featured what the company calls a Phased Array design. The specific techniques involved in this approach include placing the drivers in separate enclosures so that each can perform in an optimum acoustic environment, minimizing diffraction from enclosure boundaries and adjacent drivers, and physical phase compensation to enable the outputs of all the drivers to reach the listener in the correct time relationship.

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MANUFACTURER Dahlquist, Inc., Dept. SR, 601 Old Willets Path, Hauppauge, NY 11788

TEST REPORTS

One of a new series of Dahlquist Phased Array speakers is the DQ-16, a compact floor-standing system constructed like a "mini-tower" to minimize its footprint. Its side panels are not parallel, to reduce internal standing waves-the cabinet tapers from 10³/₄ inches wide at the front to 7 inches wide at the rear. It is 10 inches deep at the base, slightly less at the top, where the grille curves backward. Stretched over a flexible plastic frame. the grille cloth is securely held to the cabinet by magnetic strips along its borders and on the corresponding sections of the fixed frame.

The DQ-16 is a two-way system with a single 6-inch woofer crossing over at 18 dB per octave at 2 kHz to a $\sqrt[7]{s}$ -inch aluminum-dome tweeter. The woofer cone is made of carbon-impregnated polypropylene, with a butyl-rubber surround, and its enclosure is ported at the bottom of the speaker's back panel. Dahlquist claims that the woofer loading differs from that of a standard bass-reflex enclosure, providing the efficiency of a conventional ported system with the slower lowfrequency rolloff of an acoustic-suspension (sealed-box) design.

The tweeter is mounted above the woofer enclosure, set back about 2 inches from the woofer baffle plane and tilted slightly backward. This alignment has the effect of placing the acoustic centers of the two drivers approximately equidistant from a seated listener, thus maintaining the phase relationships in the program material. The soft flocking material covering the woofer's mounting board and the ring of felt surrounding the tweeter are intended to reduce sound-wave diffraction at the boundary between each driver's radiating surface and the adiacent supporting structure, helping the speaker to generate an acoustical waveform similar to that of the electrical driving signal.

The DQ-16 has separate gold-plated binding-post terminals for its tweeter and woofer, enabling biwiring or biamplification if desired (they are joined by jumper straps for normal operation). The terminals are recessed into the back panel, just above the woofer port.

With the two speakers placed several feet from any walls and about 6 feet apart, their averaged frequency response in the room was ± 2.5 dB from 2 to 20 kHz. The close-miked woofer response was flat within ± 1 dB from 40 to 300 Hz, sloping smoothly downward to join with the tweeter curve at 2 kHz. Although the spliced curves made it appear that the DQ-16 had a bottom-heavy response, quasi-an-echoic measurements with our Audio Precision MLS (maximum-length sequence) system showed a variation of only ± 2.5 dB from 300 Hz to 19 kHz—among the flattest speaker responses

To maintain proper phase relationships, the drivers are mounted so their acoustic centers are approximately equidistant from a seated listener.

we have measured to date—and that result was corroborated by our extended listening tests.

Quasi-anechoic measurements over a range of vertical angles to the speaker's forward axis revealed a rather large narrow-band response dip, apparently due to cancellations in the crossover region. The dip was not detectable in room-response measurements or by ear, however.

The tweeter's dispersion was exceptional, especially in view of its ⁷/₈inch dome diameter. At 45 degrees offaxis, the decrease in output was not significant below 10 kHz and was less than 4 dB at 20 kHz.

The DQ-16's impedance measured 6 ohms from 100 to 300 Hz, agreeing exactly with the manufacturer's 6ohm rating, although it fell to about 4 ohms between 3 and 20 kHz. Maximum readings of 13 and 17 ohms were reached at 58 Hz and 1.2 kHz, respectively. Sensitivity measured 87 dB sound-pressure level (SPL) at 1 meter with a 2.83-volt input signal, slightly below Dahlquist's 89-dB rating for the loudspeaker.

Low-frequency distortion at a constant 4-volt input (equivalent to a 90dB-SPL output in our sensitivity measurement) was surprisingly low for a 6inch woofer. Measuring between 0.4 and 1 percent from 2 kHz down to 180 Hz, it reached 2 percent at 70 Hz and 7.5 percent at 40 Hz. The woofer proved able to withstand very high peak power levels despite its small size, although its cone bottomed with a single-cycle burst of 210 watts at 100 Hz. At 1 kHz it safely absorbed 415 watts (the clipping power of the amplifier into the system's 16-ohm impedance at that frequency), and the dome tweeter was not harmed by a 1,500watt burst at 10 kHz.

Ultimately, listening is the only real basis for establishing sound quality, and here the DQ-16 lived up to both its very good measurements and its manufacturer's claims. In respect to balance-the unity of its sound and its freedom from unnatural characteristics-the DQ-16 was a very impressive (and thoroughly satisfying) speaker. Its quality was apparent on first listening and was reinforced with continued exposure to its sound. Not once did we hear a screechy top end or muddy, tubby bass, and rarely was there any conscious awareness of the source of the sound.

As notable as the DQ-16's overall performance was, it was still a surprise to hear bass reproduced so well by a single 6-inch driver. Even 40-Hz test tones and organ-pedal notes in that general range were reproduced without obvious distortion at a room-filling level, a feat that many speakers with much larger drivers cannot match. If you are addicted to the sort of bass that will untie your shoelaces, you'll need a good subwoofer, but short of that, this little speaker needs no assistance.

The Dahlquist DQ-16 was simply the kind of speaker that invites extended listening, and not once did I feel the urge to disconnect it and use one of the several other speakers we had on hand. That is one of the highest accolades I can bestow on a speaker (or any other audio component), and it's a major reason why I consider the DQ-16 an exceptional value in today's speaker market.

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TEST REPORTS



JBL PS120 Powered Subwoofer RSCH-HOUCK LABORATORIES

HE PS120 is the top model in JBL's new series of powered subwoofers designed to add one or more octaves to the lower bass range of most high-fidelity speaker systems. The PS120 contains a 100-watt amplifier and a single 12-inch driver with a 2-inch-diameter voice coil operating in a sealed enclosure. It is normally driven by the sum of the left-channel and right-channel signals, producing a mono output (a practical

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approach, since there is virtually no directional information in the subwoofer's range). The summing is achieved electronically.

The PS120 has inputs for both speaker-level and line-level signals, enabling it to be driven by the output of a preamplifier or from the speaker outputs of the main system amplifier. It can be driven by either channel alone or by both.

The PS120's rear panel contains a number of connectors and controls. Spring-loaded connectors (which accept only stripped wire ends) are used for the speaker-level inputs, and a second pair relays those input signals (unmodified) out to the stereo speakers. A pair of phono jacks are provided for line-level inputs, and a small switch reverses the subwoofer's polarity to match the polarity of the main 👸 speakers.

A small knob varies the crossover frequency between 50 and 200 Hz.
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SONY

TEST REPORTS

Since the main system speakers operate over their full range when used with the PS120, this setting is important (though fortunately not unduly critical) for achieving a smooth crossover to the subwoofer. A second knob adjusts the level of the subwoofer output, from zero to maximum, to match the level of the main speakers in the crossover region.

The subwoofer's grille, which is not removable, occupies about two-thirds of the front panel and is angled slightly to the left (there is no indication that the driver itself is angled, nor would there be any advantage to angling it). A small LED indicator next to the grille lights in red when the speaker is plugged into a power source but not in use. When a signal is applied, its amplifier switches on and the light changes to green. After a few minutes of no signal, the amplifier shuts off automatically and the status light returns to red.

JBL says that the PS120's lower response limit is 23 Hz and that the upper -6-dB point is variable between 62 and 250 Hz. No other performance specifications are given.

We made close-miked measurements of the JBL PS120's frequency response at three settings of the crossover control: the limits of 50 and 200 Hz and the midpoint of the adjustment range. At the 50-Hz setting, the response variation was only about ± 2 dB from 20 to 60 Hz, and the crossover slope was 20 dB per octave. At the maximum crossover setting of 200 Hz, the response varied about $\pm 3 \, dB$ from 20 to 200 Hz. The midpoint setting gave the flattest response in the range below 100 Hz, varying only ±1 dB from 100 to 20 Hz. The crossover's slope was constant through the range of the frequency adjustment.

Using the 200-Hz crossover setting, we measured the distortion in the subwoofer output at the 100-Hz input level required to produce a 90-dB sound-pressure level (SPL) 1 meter from the speaker. The distortion remained less than 1 percent from about 280 Hz down to 62 Hz, increasing to 3 percent at 50 Hz, 7 percent at 40 Hz, and 20 percent at 30 Hz. At reduced outputs, distortion remained low down to 20 Hz, but at listening levels where realism would be substantially enhanced by a subwoofer, the PS120's At listening levels where realism would be enhanced by a subwoofer, the PS120's practical lower limit is about 30 Hz.

practical lower limit is probably in the vicinity of 30 Hz.

The PS120 switched on instantly with a signal input of less than 5 millivolts. After removal of the signal, the speaker remained active for about 4 or 5 minutes before shutting down. Extended operation at fairly high levels resulted in only a moderately warm back panel (the amp's heat sink).

The PS120 presumably was designed to deliver the essential qualities of a true subwoofer for people using moderately priced components. If that was JBL's target, the designers hit it squarely. The PS120 is a complete package, requiring no external amplifiers or crossover networks. Regardless of the sensitivity or frequency range of your existing speakers (assuming they are good ones that, like most, roll off below 50 or 60 Hz), the PS120 should complement their characteristics very nicely and give you another octave of frequency coverage. Furthermore, its single, compact black box will not interfere with room decor or add a bunch of extra wires and cables to your installation. And best of all, perhaps, it is an affordable way to accomplish those ends without investing in another power amplifier.

In our listening tests, we teamed the PS120 with a pair of high-quality, modestly priced speakers, which themselves were by no means lacking in bass. The added impact of that extra octave provided by the PS120 gave its own answer to the question of whether a single powered subwoofer can be a worthwhile addition to a good, but not extravagant, music system. In the case of the JBL PS120, the answer is a definite yes!



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TEST REPORTS



DCM CX-07 Loudspeaker System

JULIAN HIRSCH + HIRSCH-HOUCK LABORATORIES

T HE DCM CX-07 is a small, light, and inexpensive two-way loudspeaker based on a 6½-inch woofer operating in a vented enclosure. The high frequencies are handled by a ¾-inch soft-dome tweeter, damped and cooled by magnetic fluid. Somewhat unconventionally, the woofer is located on the upper half of the front panel, with the tweeter below it. DCM says that the design and placement of both the drivers and the crossover contribute to a natural sound distribution and good imaging over a wide range of locations.

Both of the CX-07's drivers are magnetically shielded so that it can be placed close to a TV set or video monitor without picture interference. Another concession to the growing popularity of home theater is the packaging of the speakers as single units to simplify the purchase for anyone wanting to use a CX-07 as, say, the center-channel speaker in a home theater installation.

The front of the CX-07's cabinet is covered by a removable black cloth grille on a plastic frame. The input connectors, recessed into the back panel, are insulated spring clips that will accept single or dual banana plugs as well as wire ends (lugs or bare heavy-gauge wire are not suitable, however). The woofer port is also located on the rear panel.

We placed the DCM CX-07 speakers on 26-inch stands for listening and testing. They were about 9 feet apart, 3 feet from the side walls, and 2 feet in front of the wall behind them.

The room response, averaged from both speakers at a single microphone location, was exceptionally smooth and uniform from 200 Hz to 20 kHz. At lower frequencies the room boundaries inevitably affected the measured

DIMENSIONS 8¾ INCHES WIDE, 15 INCHES HIGH. 9 INCHES DEEP FINISM BLACK WOODGRAIN VINYL PRICE \$249 A PAIR MANUFACTURER

DCM LOUDSPEAKERS, DEPT. SR, 670 AIRPORT BLVD., Ann Arbor, MI 48108 response, although it remained unusually strong considering the size of the woofer cones.

A close-miked measurement of the woofer response, combined with a measurement at the port, indicated a substantial output down to the vicinity of 30 Hz, a maximum at 100 Hz, and a downward slope from there to about 1 kHz. Splicing the bass response to the room response produced a composite frequency response with a moderately elevated output below about 300 Hz, to a maximum of about + 6 or + 7 dB at 100 Hz. Above 300 Hz the output was exceptionally flat and smooth, remaining within a 2.5-dB range from 300 Hz to beyond 15 kHz.

A response measurement at close range, with a sweeping one-third-octave noise signal, confirmed the excellence of the speaker's response from 100 Hz to 20 kHz. When the curve was smoothed to minimize the effects of the minor irregularities inherent in most loudspeaker measurements, its variation was a mere ±1 dB over that entire range. Although this figure does not mean that the speaker's output at every frequency in that range remained within those limits (actual variations between the one-third-octave measurement steps were typically about 2 to 3 dB), it says a lot about the CX-07's overall octave-to-octave response. This characteristic has a great deal to do with the overall balance and quality of a speaker's sound.

The system's horizontal dispersion was measured in the same manner and was likewise very good. At 45 degrees off the forward axis, the output had dropped by 2 dB in the range of 2 to 5 kHz, by 4 dB at 10 kHz, and by 10 dB at 20 kHz, all somewhat better results than for most speakers we have tested.

Our quasi-anechoic MLS response measurements showed a rather uniform output (within 2 or 3 dB overall) from 2.5 to 10 kHz. In the next higher octave, a sharp \pm 4-dB jog at about 16 kHz (which appeared as a barely discernible "blip" in the room measurements) clearly marked the upper tweeter resonance, although it was too high in frequency and narrow in bandwidth to be audible.

The CX-07's sensitivity measured 90 dB, close to the rated 91 dB. At 2.83 volts input, its distortion averaged about 0.5 percent from 2 kHz down to

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150 Hz, rising smoothly to 2 percent at 70 Hz, 5 percent at 40 Hz, and just 10 percent at 20 Hz. That's remarkably low distortion for a single $6\frac{1}{2}$ -inch woofer in a small box.

The CX-07's impedance characteristic was among the best we have seen lately from the standpoint of amplifier compatibility. With low readings of 6 ohms at 20, 50, and 200 Hz and highs of 20 ohms at 32 Hz, 28 ohms at 90 Hz, and 22 ohms at 2.2 kHz, it should pose no problems for any respectable amplifier. In single-cycle pulse tests, the speaker handled all the power our amplifier could deliver at 1 and 10 kHz (550 and 690 watts, respectively). At 100 Hz, however, the small woofer showed its limitations, exhibiting visible waveform distortion at inputs as low as 5 watts, but not sounding particularly "hard" until the pulse peak reached 165 watts.

The best news is that the CX-07 sounded every bit as good as it measured. Whether viewed from the standpoint of size or price, it is clearly an excellent choice for either a basic music system or a Dolby Pro Logic home theater setup.

The moderately lifted bass response from 50 to 200 Hz gives the system a feeling of solidity that many small speakers lack. Although it will not shake the floor on low bass notes, it delivers enough fundamental energy to let you know they are present. We confirmed that the CX-07's could reproduce an audible 31.5-Hz fundamental, and at 40 Hz one would think speakers several times their size were in use. Their virtues were not limited to the bass, however: Overall smoothness and balance were also excellent. and imaging was among the most accurate we have yet experienced from the Chesky JD37 test disc.

What we heard (and, to some degree, measured) from the DCM CX-07 would do credit to many far larger and costlier speakers. At its price, it is a steal. It is only fair to point out that the CX-07 is not a handsome piece of furniture, nor does it have a fine wood finish, but few speakers in its price range do. You should also realize that there are now a number of very nicesounding speakers priced at \$250 a pair or less. Even so, the CX-07 is certainly one of the top-ranking speakers in its class.



Boston Acoustics SubSat7 Three-Piece Loudspeaker System

HE SubSat7 is Boston Acoustics' second loudspeaker system in the popular three-piece format. using two small satellite speakers and a common bass module. The satellites are housed in rugged black molded-polystyrene enclosures, identical in size and shape to those of the lower-price SubSat6 Series II. The satellites for both models use a 4-inch cone driver, but the SubSat7 has a 1inch ferrofluid-cooled dome tweeter in place of the SubSat6's 3/4-inch dome. Crossover networks for the transition between the satellite drivers at 2.5 kHz and high-pass filters that roll off the input below 150 Hz are also in the satellite enclosures. Each satellite has gold-plated insulated binding posts, compatible with banana plugs as well as wires and lugs, recessed into its back panel.

The three-chamber bass module

contains two 7-inch cone woofers that operate below 150 Hz (the SubSat6's similar, but smaller, bass module uses 6½-inch drivers). Although each woofer handles the signal from a single channel, their combined acoustic output emerges from a single port at one

DIMENSIONS

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*Peter W. Mitchell. Stereophile, Vol. 12 No. 6, June 1989 ** Stereo Review, 1989



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end of the enclosure, which also contains the bass crossover network (complementary to those in the satellites). Two pairs of input connectors, similar to those of the satellites, are on the bottom of the bass module, which is supported on four ¼-inch rubber feet. The bass port is on the rear of the enclosure.

The satellites are normally most effective in a freestanding installation on stands or similar supports. The rear of each satellite cabinet also has a threaded fitting that can be used for wall mounting. Suitable stands and wall brackets are available.

Like any three-piece speaker system, the SubSat7 allows a wide choice of locations for its bass module. The recommended placement, providing the strongest bass output, is near a room corner with the port near a wall. The module's location can be chosen without regard to the satellite placement, however, since the low frequencies it radiates cannot be localized by the listener.

Since each speaker module contains its own crossover-network components, there are a number of ways to wire the system together and to the amplifier. The amplifier connections can be made directly to the satellites, with separate cables from each of them to the corresponding terminals of the bass module. The reverse is equally possible—going from the amplifier to the bass module and from there with separate cables to the satellites. Finally, you can wire each speaker in the system directly to the appropriate amplifier output.

The manufacturer's specifications for the SubSat7 claim a frequency response of 41 Hz to 20 kHz \pm 3 dB. The nominal system impedance is 8 ohms, and it is recommended for use with amplifiers rated from 15 to 125 watts per channel. The system's rated sensitivity is 89 dB.

We installed the Boston Acoustics SubSat7 as recommended, with the bass module close to a corner and its port about 8 inches from one wall. The satellites were placed on 26-inch stands, about 2 feet from the wall behind them and 4 feet from the side walls. We made our room-response measurement with only the satellites operating, since it does not yield valid results at lower frequencies. The averaged room response from the two satellites was within ± 3.5 dB from 110 Hz to 17.5 kHz. The output from 100 Hz to 1 kHz averaged about 5 dB higher than between 1 and 10 kHz, but it was quite smooth overall. There was a peak of about 2.5 dB at the tweeter resonance of 13 kHz. The satellites' bass output dropped rapidly below 120 Hz, at a rate of about 30 dB per octave. Quasi-anechoic (MLS) measurements of the system's frequency response confirmed the essential features of our room-response measurements.

We measured the response of the bass module separately, with the test

The Boston Acoustics SubSat7's bass module can be placed without regard to satellite location, since the frequencies it radiates cannot be localized by ear.

microphone at its port. The curve had a double-humped shape, with small peaks at 55 and 135 Hz, dropping off at 18 dB per octave at lower frequencies and at 24 dB per octave at higher frequencies. The combined response of the satellites and bass module measured within ± 3.5 dB from 40 Hz to 17.5 kHz.

The satellite's horizontal dispersion was good. At 45 degrees off the speaker's axis, the measured output was reduced by about 2 dB up to 7 kHz, 4 dB at 10 kHz, and 9 dB at 15 kHz.

Sensitivity measured 88 dB soundpressure level (SPL) with a 2.83-volt input, very close to the manufacturer's rating. Impedance was less than 10 ohms over most of the audio band, exceeding that value only at 33 Hz and in the range from 1 to 3 kHz, where it reached about 12 ohms. The minimum impedance of 3.5 ohms occurred at 100 and 400 Hz. Although that makes the system's 8-ohm rating questionable, it should not pose any problems in normal use.

Distortion from the satellite's 4-inch driver was less than 2 percent over its full operating range at a 3.5-volt input (equivalent to a 90-dB SPL in our sensitivity measurement). The minimum reading of 0.3 percent was reached between 500 and 900 Hz. The bass module's distortion was less than 2 percent from 150 to 75 Hz, increasing to between 3 and 8 percent from 75 to 40 Hz.

The SubSat7 was able to absorb prodigious short-term power inputs without obvious distortion or damage. At 1 and 10 kHz, the satellites withstood a single-cycle input of more than 950 watts without damage (although there was considerable ringing on the 10-kHz burst). More impressive was the way the bass module handled a 100-Hz burst. Although the sound became hard, there was no evidence of the woofer suspensions bottoming with an input of 1,180 watts. Reducing the power to 570 watts removed the hardness, and the speaker's output was audibly quite clean.

Listening to a variety of program material through the SubSat7 verified that its audible performance was consistent with our measurements. In particular, its bass reproduction was most impressive, with a useful output extending somewhat below 40 Hz. Only a true subwoofer, operating below that frequency, could make a noticeable improvement in the system's low-end response, and then with only a handful of musical pieces and some spectacular movie soundtracks.

Although the SubSat7 is priced toward the high end for three-piece systems these days, it delivers solid value for the money. In direct comparisons with other speakers that have impressed us with their sound, it easily held its own. Of course, all speakers sound different, and it is rarely possible to say definitively which is "better" once a certain level has been reached (everyone has his own opinion on such matters), but we would rank the SubSat7 with most conventional speakers in or near its price range. As a competitor in the top ranks of three-piece speakers, it will challenge anything close to its price.

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Philips Digital Loudspeaker System JULIAN HIRSCH + HIRSCH-HOUCK LABORATORIES

N recent years, most audio components have benefited, at least to some degree, from the use of digital circuitry. No truly digital speaker has yet been created, however, nor does that appear to be an imminent possibility. Ultimately, the sound has to be created by a moving physical surface, essentially analog in nature. This is as true of the Philips DSS930, which is part of what the manufacturer calls a digital speaker system, as of any other speaker. But the DSS930 is designed to be operated through the DSC950 Digital System Controller, making the system as close to truly digital as seems to be currently feasible. The DSC950 is essentially a digital preamplifier (providing digital output) designed to handle a number of input sources, both analog and digital. These include phono (moving-coil and moving-magnet), CD, tuner, TV, and

VCR, plus input and output connections for two audio tape decks. Digital connections are also provided for four program sources and a digital signal processor (DSP) accessory.

Externally, the DSC950 resembles a conventional preamplifier. A display window shows its operating status, and large knobs select the input source and adjust the volume level. Two small knobs operate the bass and tre-



ble tone controls, and pushbuttons control other operating features. The DSC950 also has a front-panel headphone jack with its own volume knob. A wireless remote operates all the key control functions.

The Philips DSS930 speaker is a compact two-way powered system designed for upright stand mounting. Its two 51/4-inch polypropylene-cone woofers operate in a sealed enclosure. They cross over at 4 kHz to a Philips Isophase tweeter, somewhat similar in concept to a small planar driver with a curved radiating surface and designed to give wide horizontal dispersion. The woofers are driven by an internal 80-watt amplifier, the tweeter by a separate 20-watt amplifier. The speaker is designed to be permanently plugged into a powered AC outlet, remaining in a standby condition until a signal appears at its input. Red and green pilot lights on the front of the cabinet show its operating status.

The internal 36-dB-per-octave crossover between the bass and treble drivers is achieved by digital filters within ers is achieved by digital filters within the speaker system. Philips says this

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Model Six continues a long tradition of **best**-selling, high performance, high value, two-way speakers by Henry Kloss. Very natural, accurate, wide-range sound-only \$119 each!

What does Model Six give up compared to our Ensemble systems? With big amplifiers in large rooms, Ensemble and Ensemble II can play louder, and they have greater low-bass extension. They also give you tremendous room-placement flexibility, which allows you to optimize performance, with little impact on the decor of your room.

Costly Components. Thoughtful Design.

At the heart of Model Six are its drivers, a 1¼" cone tweeter with center %" dome (the same tweeter we use in Ensemble), and **a** newlydesigned 8" acoustic suspension woofer. While classic in their simplicity, these drivers differ greatly from other moderate-cost speakers.

Model Six's crossover frequency is 2,000 Hz, much lower than many other two-way designs. This makes it possible to ensure smooth, uncolored upper midrange with wide dispersion. Such a low crossover frequency would not work with conventional tweeters. But Model Six's tweeter uses a suspension that allows the "long throws" necessary to reproduce music in this range.

The 8" woofer cone is larger than those usually found in speakers of Model Six's size and price, allowing it to move substantial amounts of air at low frequencies. And Model Six puts emphasis on very low frequencies instead of the mid-bass "rise" common in many speakers. The result is bass that is more accurate and extended than similar systems.

But most important is how Henry Kloss went on to "voice" the system-painstakingly fine-tuning the octave-to-octave balance. This is the most important factor in determining the overall sound of a speaker.

Elegant Cabinet Design.

We devoted considerable time and effort to making Model Six visually appealing. Convincing simulated wood finishes were chosenin oak, teak and black ash. A subtly rounded "bullnose" molding frames a medium charcoal grey grill that was custom-woven for Model Six.

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Because we sell factory-direct, Model Six sells for *far* less than it would cost in stores. At \$119 each, in your choice of three finishes, it is *the* value in today's loudspeaker market. If you aren't satisfied, you can return Model Six within 30 days for a full refund.

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

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

And Then There Were Two.

Now Cambridge SoundWorks has introduced Ensemble II, a more affordable version of Ensemble using only one cabinet to hold both subwoofer drivers. Ensemble II has joined Ensemble in the ranks of the country's best-selling speak-



The real difference is in the subwoofer.

ers. We believe Ensemble II is a better system than its best-known competitor. And because we sell it factory-direct, it's half the price. *Stereo Review* said "Ensemble II performs so far beyond its price and size that it can be compared only with much larger speakers at substantially higher prices." We agree with the writer who said, "It's hard to imagine going wrong with Ensemble." The question is, which Ensemble system is right for *you*?

The Same Satellite Speakers.

When you listen to either Ensemble system, almost 90% of the music you hear is being reproduced by the satellite speakers. Both Ensemble and Ensemble II use satellite speakers that are virtually identical.* Unlike many competing systems, Ensemble's satellites are true two-

way speaker systems, each containing a high performance tweeter and a 4-inch woofer. *Stereo Review* said, "The Ensemble satellites delivered a smoother output than

True acoustic suspension, sealed subwoofer cavity.







many larger and more expensive speakers."

Small $(8\%'' \times 5\%'' \times 4'')$ and unobtrusive, they'll fit into the decor of any room. They're available in scratch-resistant gunmetal grey Nextel, or primed so you can paint them any color you wish.



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

The Same Overall Sound.

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

The Same Attention To Detail.

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

The Same Factory-Direct Savings.

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

The Same 30-Day Total Satisfaction Guarantee.

Choosing a loudspeaker after a brief listen at a dealer's showroom is like deciding on a car after one quick trip around the block. So we make it possible to audi-

tion our speakers the *right* way-



Stereo systems featuring Ensemble and Ensemble II speakers with Pioneer or Philips electronics start at only \$799, including CD player. Dolby Surround Sound systems start at only \$999.

in your own home. You get to listen for hours without a salesman hovering nearby. If within 30 days you're not happy, return your speaker system for a full re-



fund. We even reimburse original UPS ground shipping charges in the continental United States.



The only difference in satellites is that the original Ensembles use gold-plated connectors that allow use of even the heaviest gauge wire.

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

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

How To Order.

The dual-subwoofer Ensemble system is available in two versions. With handsome black-laminate subwoofers for \$599. Or with black vinyl-clad subwoofers for \$499. Ensemble II is priced at \$399. For more information or to order call our audio experts, 24 hours a day, 365 days a year. We'll send you our 64 page color catalog with stereo and surround sound components and systems from Cambridge SoundWorks, Pioneer, Philips, Denon and others. Because we sell factory-direct, eliminating expensive middle-men, you can save hundreds of dollars.

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TEST REPORTS

approach enables near-perfect phase relationships between the drivers in the crossover region and correction of certain driver nonlinearities.

The DSC950 control unit connects to the DSS930 speaker through a single thin cable, with standard phono plugs on both ends, that carries digital audio and control signals for both channels. Each speaker contains separate Philips Bitstream single-bit digital-to-analog (D/A) converters for its bass and treble drivers. The DSC950 can operate as many as three separate pairs of speakers in different locations (cable lengths up to 60 feet can be used to daisy-chain one pair of speakers to another). Switches on the back of each speaker cabinet determine whether it is in group A, B, or C and whether it carries the left- or right-channel program. A small wireless remote control furnished with each pair of speakers can be used to operate the system by pointing it at one of the speakers; it can turn any of the pairs (or the entire system) on or off, vary the speaker volume, or temporarily reduce their volume by 24 dB. The DSS930 will operate with sampling rates of 32, 44.1 (the CD standard), and 48 kHz.

s recommended, we mounted the speakers several feet from a room wall on stands that placed their tweeters at a listener's ear level. The averaged room response of the two speakers was flat within ±2.5 dB from 700 Hz to 5 kHz and, about 3 dB lower in level, within ±1.5 dB from 5 to 20 kHz. Our close-miked woofer response curve spliced easily to the room curve with almost a two-octave overlap, yielding a composite response with a slightly elevated output between 400 and 70 Hz and an 18-dB-per-octave drop from 70 to 20 Hz.

The curve's shape suggested that the sound should have been slightly warm because of the 2 or 3 dB of elevation in the lower midrange and upper bass. Although we sometimes heard such an effect, most of the time the speaker sounded flatter than it measured. Indeed, our first reaction was that it sounded very neutral. Not only was the overall response smooth and balanced, but there was also a striking absence of the artificial heaviness that frequently mars the voices of male radio announcers. Perhaps the two small woofers simply did not go down low enough to produce this effect? A few organ-music and test CD's put that speculation to rest: The DSS930 can put out a clean, strong 40 Hz and, at a slightly lower level, a relatively undistorted 31.5 Hz. Its bass range and output capabilities far exceed those of most speakers its size. As for the rest of the audio spectrum, it sounded as smooth and uncolored as one could wish.

The DSC950 has a Compensation button that is said to linearize the speaker's amplitude and phase response. We noted an increase in bass output when the circuit was activated, and measurements showed an increased output below 1 kHz, amounting to 5 dB at 100 Hz and 12 dB at 40 Hz. It makes a substantial improvement in the lowest octaves, and it can easily be switched off if desired.

Quasi-anechoic MLS measurements generally confirmed our roomresponse curves. The response shelf, with the output above 5 kHz perhaps 3 to 4 dB lower than below that frequency, was evident in every measurement. We were surprised, however, to find a deep notch at the 4-kHz crossover frequency, amounting to a nearly complete cancellation of the output (the notch was typically 20 dB deep, but very narrow so that it was not audible in program material). This measurement also showed a sharp jog in the system's phase response at that frequency, with nearly constant phase above it.

The dispersion of the Isophase tweeter was excellent. At a 45-degree angle to the forward axis, the reduction in output was less than 2 dB up to 6 kHz, 3 dB at 10 kHz, and only 6 dB at 20 kHz.

With the 100-Hz output set at 90 dB sound-pressure level (SPL) at 1 meter, distortion was well under 1 percent above 200 Hz but increased rapidly at lower frequencies to 10 percent at 90 Hz. At 80 dB SPL (a more reasonable level for drivers of this size), the distortion was only 2 percent at 100 Hz and 8 percent at 40 Hz.

It is difficult to describe the sound of a speaker that has relatively few sonic peculiarities. Compared with most speakers we have heard in the same room, the Philips DSS930 was almost antiseptic, with hardly any obvious colorations. It was not shrill or overbearing at the top end, and it was certainly not tubby or bass-heavy. It didn't "honk" or impart harshness to the sound. It was especially realistic when reproducing the human voice, either male or female. But if you really want to know what makes this speaker special, the best thing to do is listen to it yourself. A few minutes' listening is worth thousands of words!

HE sound is only part of the picture, however. The Philips DSC950/DSS930 combination is a thoroughly integrated music system, probably the easiest to install that I have ever encountered (barring one-piece designs). There is a minimum of wiring and little opportunity to go astray (it is not possible to connect a speaker out of phase, for example). It can serve as the nucleus of a fine multiroom system, with access to most control functions from any room. The DSC950 itself is perhaps the most user-friendly control center one could wish for, with a minimum of arcane nomenclature and a clear display panel (the instruction manuals for both components are excellent, by the way). I could go on, but it should be evident that this is a thoroughly thought-out system, well worth its price.

True, that price is considerable, but hardly astronomical by today's standards. Is the system right for you? That is your decision, not mine, although I can tell you who shouldn't buy it. It can play loud enough to preclude conversation in the same room, but it cannot be expected to match the levels of 100+ dB that are preferred by some. It is at its best reproducing instrumental music (not sound effects or what passes for music in some circles, although for all I know it might make a pretty good, if pricy, part of a home theater system). If you are a deep-bass aficionado, you'll want a subwoofer, and that won't be easy to add to this system, at least for the present.

These Philips components form the most affordable digital reproducing system I know of. There will be others, eventually, and in time their prices should become more competitive with those of conventional analog systems. For now, I like what I see (and hear) in these products.



DESIGNS BY HENRY KLOSS

Our new Certer Channel and Center Channel Plus speakers are magnetically shielded, so they won't α use video interference, even when placed very near a !V screer.

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

Cambridge SoundWorks sells two speakers designed by Henry Kloss specifically for use as center channel speakers in Dolby Surround Pro Logic systems-the Center Channel and Center Channel Plus. Our experience with Dolby Surround Pro Logic systems has shown that the center channel is *very* important. A significant portion of movie soundtracks is directed to the center channel. It's crucial to use a speaker that reproduces that material



Place our low-profile Center Channel Plus above your TV or, with optional support, use it as a base for your TV.





accurately, with the proper volume level and dispersion pattern.

Center Channel by Henry Kloss.

Center Channel is a compact, two-way acoustic suspension speaker with a 4" woofer and a ring radiator tweeter. Because of its compact size $(8\%" \times 5\%" \times 4")$, it's simple to place Center Channel directly on top of or below your TV screen, so that dialog and sound effects will seem to emanate from their on-screen source.

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

Center Channel Plus by Henry Kloss.

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

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

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CAR STERFN



Pioneer KEH-M680 Cassette Receiver KEN C. POHLMANN • HAMMER LABORATORIES

LTHOUGH CD players are now a fairly common sight in the dashboards and trunks of the cars cruising America's roadways, the cassette receiver is still the preferred playback medium for millions of motorists. To remain competitive, the venerable tape format has evolved over the years, trying valiantly to offer fidelity and convenience to rival its disc challenger.

Case in point is Pioneer's KEH-M680 autoreverse cassette receiver. It looks as high-tech as any CD head unit, and it even incorporates controls for a remote CD changer, so that you can also enjoy CD's if you decide to add a Pioneer changer. As with many CD heads, the KEH-M680 provides a number of perks. In particular, its black front panel sports no fewer than twenty-two buttons. Pioneer's designers have done a pretty good job in merging form and function.

The source button is used to turn the head on and off and to switch between tuner, tape, and the optional CD changer. The unit automatically initiates tape playback when a cassette is inserted. The volume rocker button is actually multipurpose, varying the overall level as well as the fader, bass, midrange, treble, and balance. The additional functions are selected by pressing the nearby shift button. The fader varies the output levels of both the line-level preamplifiers and the internal power amplifiers. For added flexibility, there is also a small fader knob that governs only the front and rear power-amplifier outputs.

Other controls are more conventional. The loudness button provides a 12-dB boost at 100 Hz and a 7-dB boost at 10 kHz at low levels (-30)dB). When held down, it changes the color of the display from green to amber or vice versa. The band/clear button cycles through one AM and three FM memory banks. Radio stations are tuned using the track/tune rocker button; to use the auto-seek and manual tuning modes you press both ends of the button simultaneously. During seek tuning you can switch from distant to local sensitivity by

> DIMENSIONS 7 INCHES WIDE, 2 INCHES HIGH. 5% INCHES DEEP PRICE \$440 MANUFACTURER PIONEER ELECTRONICS (USA), INC., DEPT. SR. 2265 E. 220TH ST. LONG BEACH, CA 90810

pressing the ITP/LOC.S (instant track programming/local sensitivity) button. Four FM and two AM sensitivity levels are available, selected with the track/tune button. In tape mode the track/tune button lets you skip-search through tape selections. In CD mode it skips between tracks, and pressing both sides of the rocker simultaneously engages the fast audible-search mode. The ITP/LOC.S button lets you program up to thirty-two tracks from a single CD-changer cartridge and store playback sequences for up to sixteen different cartridges.

As its complex label suggests, the RPT/RDM/D.RPT/MONO button is a gateway to numerous functions. In CD mode it's used to engage track repeat. random track playback from the selected disc, and, when held down, disc repeat. In tuner mode it shuttles between mono and stereo.

There are six tuner presets. In tape mode presets 4, 5, and 6 select music search, Dolby B, and "metal tape" (70-microsecond equalization), respectively. In CD mode the preset buttons are used to select from the six discs in the changer. When held down for a few seconds, the BSM (best-station memory) button loads the six strongest stations into the selected memory bank. The T.SCAN/P.SCAN (track scan/preset scan) button lets you audition either preset stations or CD tracks. Finally, a clock button is on hand to display and reset time.

The large display window shows the tuned frequency and band, preset bank and number, disc and track number, and so on. Icons indicate operating modes and tape direction. The display also flashes a heat indicator if high temperatures shut the unit down, and it supplies numerous diagnostic messages such as "unplayable disc."

To help keep the KEH-M680 out of the clutches of crack heads, the front panel is detachable. Simply press a small button on the panel's right side and the entire faceplate pops off, leaving behind a clearly nonfunctional ing case for the face. To remind you to $\frac{3}{2}$ head. Pioneer supplies a plastic carrydetach the panel, a buzzer sounds if you don't remove it within 5 seconds of turning off the ignition (the buzzer is defeatable for those who want to live

The Powered Subwoofer That Has The Audio And Video Press Jumping Out Of Their Seats.

A jet roaring in Top Gun. The heavyfooted killer robot in Robocop. A semi

hitting concrete after a 20 foot fall in Terminator 2. These are examples of the substantial. very low-frequency effects on the soundtracks of today's movies. Such frequencies are rare in music, and are beyond the capabilities of most speakers designed for music.

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

Remarkable bass performance.

The Powered Subwoofer consists of a heavy duty, 12 inch long-throw acoustic suspension woofer integrated with a 140



watt amplifier-all in a high-pressure black laminate cabinet. Its control panel includes a bass level control and an 18dB per octave, four-position electronic crossover frequency selector (to match the subwoofer to your other speakers).

Additionally, an optional electronic crossover * will provide 18 dB per octave,

DESIGNS BY HENRY KLOSS

Slave Subwoofer

high-pass, line-level filters for the main and center amplifiers. These filters allow you to keep strong, low frequencies of sound effects out of the front speakers. These signals can cause distortion, even in speakers designed for full-range music.

The Powered Subwoofer's bass performance is simply awesome. It reproduces accurate bass to below 30 Hz. You'll hear soundtracks the way they were meant to be heard. In fact the bass is better than most

> Our Ultimate Home Theater Speaker System consists of our dual-subwoofer Ensemble system; our low profile Center Channel Plus speaker; a pair of our critically acclaimed surround speakers. The Surround; our Powered Subwoofer: our Slave Subwoofer. Factory-direct price: \$1,999.

theaters! At the press event when we introduced our Powered Subwoofer, we had startled members of the audio and video press literally "jumping out of their seats" during demonstrations of movie soundtracks. The factory-direct price of the Powered Subwoofer is \$599.

Optional "slave" subwoofer.

For all-out home theater performance, you can add our optional Slave Sub-woofer, which is identical to our Powered Subwoofer except that it lacks the amplifier and controls. It uses the amplifier and controls built into the Powered Subwoofer. Amplifier output jumps from 140 to 200 watts when the Slave

Subwoofer is connected. The combination of the two speakers can reproduce a 30 Hz signal cleanly to a sound pressure level of over 100 dB in a 3,000 cubic foot room! That's enough clean. deep bass for the largest home theaters, and the most demanding listeners. The factory-direct price of the Slave Subwoofer is \$299.

No compromises. No apologies.

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

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

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No Other Loudspeaker Company Can Run This Ad.

Cambridge SoundWorks is a new *kind* of audio company, with factory-direct savings, and much, much more...





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dangerously). A Clear button on the blank panel underneath the face resets the head's microprocessor.

Lab Tests

The KEH-M680 supplied for this review was a preproduction prototype, but it didn't show any serious flaws on the test bench. Tape frequency response was good in both forward and backward directions and with both normal and high-bias tape. Signal-to-noise ratio (S/N) with Dolby B was also good, and crosstalk and channel separation were satisfactory as well. The transport ran slightly fast, however. FM tuner sensitivity was excellent, and both adjacent- and alternate-channel selectivity were good, as were image and AM rejection. FM frequency response was excellent, too, though AM response was poor (as is typical of car tuners). A 19-kHz stereo pilot-tone leak caused total harmonic distortion (THD) to appear higher in stereo (1.2 percent) than it really was. Finally, the internal power amplifiers produced a measly 3.8 watts into 4 ohms, with good S/N but a high THD-plus-noise reading.

Installation

Installation of the KEH-M680 in my test car did not present any surprises. I slid the mounting sleeve into a DIN cutout, secured it by bending the metal fastening tabs and attaching the rear mounting strap, then slid the head into the sleeve until it clicked into place. Next I attached the battery and ignition leads (both fused and protected by a line filter) and the ground strap. I also attached the rear line-level outputs and the remote turn-on lead to an external amplifier. Finally, I connected two of the four speaker outputs to my front speakers and attached the antenna lead. Since I didn't use a CD changer in this test, there was no need to connect the thirteen-pin DIN plug. Incidentally, the KEH-M680's owner's manual gets thumbs down for being unnecessarily confusing.

Road Tests

On the road, the KEH-M680 proved to be a solid performer. The tape transport responded quickly, with a minimum of mechanical fuss, and playback fidelity was pretty good, with speed variation and wow-and-flutter about average for cassette receivers in this price range. Frequency response and distortion were par for a car cassette player. After listening awhile, I concluded that the S/N was somewhat better than with most car tape players. The Dolby B decoder did a good job of handling tape hiss, but I missed having Dolby C.

The FM tuner was both flexible and a good performer. Overall sensitivity was quite good, even under adverse signal conditions. It was able to pull in weak stations with a minimum of noise, yet it handled strong stations without overloading—a balancing act that was aided by the range of sensitivity settings. Other characteristics of the tuner, such as frequency response and distortion, were very good, but it seemed more vulnerable to multipath distortion than similarly priced units I've reviewed. In general, the KEH-M680 was easy to operate, although some of the button labels are a mite bewildering at first. I especially liked the extra tone control. Bass and treble are essential, but a midrange control can be very useful as well—that's where most music (and all speech) is located, after all.

The KEH-M680's power amps were average, which means that any serious listener will want to invest in an external amp. Finally, I remain a big fan of the detachable-face approach to security, which decreases the risk of theft with very little inconvenience.

Affordable, high-quality cassette head units like the Pioneer KEH-M680 keep analog tape viable in the fiercely competitive car audio market. If you believe that tape is still the way to go, the KEH-M680 will not betray your loyalty, and if you want to control a CD changer as well, it'll do it in style.

MEASUREMENTS

TAPE SECTION

Standard IEC test tapes were used for all measurements.

Frequency response (31.5 Hz to 1	8 kHz)
forward (70 µs EQ) + 3.7.	-2.0 dB
reverse (70 µs EQ) + 3.8.	-1.8 dB
forward (120 µs EQ) + 2.8,	-2.9 dB
reverse (120 µs EQ)	– 2.1 dB
Signal-to-noise ratio	
(A-wtd., 70 µs EQ)	
no NR	.53.4 dB
Dolby B	61.5 dB
Wow-and-flutter	
wrms	0.07%
IEC/DIN peak-wtd	0.15%
Speed error	+1.32%
Crosstalk (at 1 kHz)	42.6 dB
Channel separation (at 1 kHz)	.46.2 dB
Fast-wind time (C-60) 110) seconds

TUP	NER	SEC	TIO	N

All measurements except frequency response are for FM only.

Usable sensitivity	
(mono)	13.7 dBf
50-dB quieting sensitivity	
(mono)	14.6 dBf
Signal-to-noise ratio (at 65 dBf)	
mono	70.8 dB
stereo	
Channel separation (at 1 kHz)	31.7 dB

mono 0 59% stereo see text Selectivity alternate-channel. 79.6 dB adjacent-channel. 14.2 dB Capture ratio (at 65 dBf)... 3 dB AM rejection 68.5 dB **Image rejection** 52.7 dB **Frequency response FM** 30 Hz to 15 kHz +0.8, -0.7 dB AM 30 Hz to 3 kHz +0.0, -15.7 dB Maximum output level

Distortion (THD + N at 65 dBf)

(100% FM modulation) 1.6 volts

AMPLIFIER SECTION

Unless otherwise noted, all measurements were made with 14.4-volt DC power and all channels driven into 4 ohms.

0.11	nut	at clin	ning	(1 kHz)

Output at capping (1 km2)	
8 ohms	2.4 watts
4 ohms	3.8 watts
Distortion	
(THD+Nat1kHz, 1 watt)	1.85%
Frequency response	
20 Hz to 20 kHz +1.2.	-0.6 dB
Signal-to-noise ratio	
(A-wtd., referred to 1 watt)	53.4 dB
Damping factor	
Tone-control range	
100 Hz.	±11.2 dB
10 kHz	±9.4 dB



Our 64-page catalog is loaded with components and music systems from Cambridge SoundWorks, Pioneer, Philips, Denon, Sony and others. Because you buy factory-direct, with no expensive middle-men, you can save hundreds of dollars. For example, a Dolby Surround system with Ensemble II speakers, rear speakers, Philips Dolby Surround receiver, CD player and system remote is less than \$1,000. 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.
- Save hundreds on components and systems from Cambridge SoundWorks, Pioneer, Philips, Denon, Sony and more.
- Audio experts will answer your questions before and after you buy. 8AM-midnight, 365 days a year-even holidays.
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MAKING THE RIGHT CONNECTIONS

The do's and don'ts of speaker wiring

n a simpler day and age, connecting speakers to a hi-fi system was a snap. You hooked the left speaker to the left output on your receiver or amplifier and the right speaker to the right output, using whatever wire the dealer supplied or a couple of 80-cent lengths of "zip cord" from the local hardware store. The biggest concern was making sure you had enough wire to run from Point A to Point B.

Things are a bit more involved today. For one, wiring a home-theater system with four or more speakers can be considerably more complicated. And then there are multiroom setups that let you enjoy your main hi-fi or A/V system anywhere in the house—provided you make the right connections.

Basic Wiring

Choosing speaker wire for two-channel stereo is as straightforward as it ever was, with only two important considerations: What gauge and what type? Speaker wire is a source of endless (and endlessly entertaining) debate among audio nuts. Specialty cables ranging from a dollar or two to hundreds of dollars per meter are on the market, many claiming to provide sonic benefits ranging from the subtle to the dramatic. There is little agreement as to the efficacy of any particular design-much less the concept of "high-end" wire in general-but the weight of both theory and hard, empirical evidence is on the side of the skeptics. Unless your entire system is as good as vou hope to make it, wire should not be your first upgrade target.

However, it is generally accepted that truly inadequate speaker wire can sometimes degrade system performance, depending on the

electrical characteristics of the amplifier and speakers in question and the lengths of the cable runs involved. You can keep wire from becoming a sonic factor by following two general rules: 1) Shorter speaker runs are better than longer ones, and 2) thick (heavygauge) wire is generally better than thin (lightgauge) wire. The longer the run or the thinner the cable, the more resistance, which can waste power and cause small frequency-response errors. For any sort of serious listening, try to keep main-speaker runs less than 12 feet and use nothing thinner than 18-gauge copper wire (confusingly, the lower the gauge number, the thicker the wire). For lengths up to 25 feet, it's better to use at least 16-gauge wire. For still longer runs, consider moving up to 14- or 12-gauge wire.

As to what type of wire to use, the heavyduty (16-gauge), multistranded, two-conductor zip cord that's available at hardware stores for about 20 cents a foot is functionally equivalent to most inexpensive "specialty" speaker wires, but it may not be as flexible or look as good if it's not hidden. Thicker cable is often harder to track down, but not impossible. For example, MCM Electronics of Centerville, Ohio, stocks 30- to 250-foot spools of unusually flexible 12- and 10-gauge Sound King stranded coppper wire at reasonable prices, and Radio Shack sells a good 12-gauge.

If you do go for speciality cable of some sort, try to find out something about its basic electrical characteristics before you buy. You still want low resistance (sheer bulk isn't always a good guide—some cables have less wire in them than their overall thickness might suggest), and you want to beware of high capacitance, which can be trouble for some

BY DANIEL KUMIN



amplifiers. Some exotic cables have been known to exhibit higher capacitance than ordinary wire.

When it comes to making the connections, make sure the black (-) and red (+) posts of each speaker are hitched to the corresponding speaker terminals on your receiver or amplifier. If one of the leads is reversed-the positive lead to the negative terminal or vice versa-no damage will ensue, but the speakers will be out of phase with one another, impairing stereo imaging and possibly causing the bass to sound thin. The easiest way to insure correct wiring is to cue up a bassheavy song and listen for a few moments. Then reverse the leads running to one of the speakers and listen some more (don't forget to turn the speakers off before making the switch!). The configuration that yields more bass is the correct, in-phase choice.

The Home Theater Connection

Going the home theater route often means adding two or more speakers to an existing stereo pair-one for the center channel in Dolby Pro Logic systems, a couple to the sides or rear of your listening room for surround, and possibly a subwoofer or two to deliver low bass (see "Subwoofer Setup" on page 56). It also means additional wiring chores. In the case of a center speaker, follow the same wireselection guidelines given for main speakers and, as always, keep the run as short as possible. Maintaining correct phase with the adjacent left and right speakers is also critical, so be sure to follow the same red (+) and black (-) hookup pattern.

chieving proper phase may be tricky if the center speaker is driven by an outboard amplifier (as opposed to an A/V receiver or integrated amp with a dedicated center-channel output): Some amps invert the signal from input to output, and some don't. The easiest way to tell if the signal is in phase is to switch in the Pro Logic processor and select the "wide" center mode. Then play a bass-rich monaural program sourcemale FM announcers usually work well. Turn the processor's input-balance control to one side until the voice is centered between the middle speaker and one of its lateral counterparts. Listen for a few moments, then reverse the center speaker's leads. Again, the hookup that yields more bass is the one that's in phase. You should also double-check the left and

right speakers to make sure they are wired in phase.

Hooking up surround speakers is more challenging because it usually involves running wire from one side of the room to the other. Ideally, the wire-size rules for main speakers should apply here as well. But since surround-channel information is less critical than that handled by the front channels, and thick wire is often difficult to conceal, you could sneak by with lighter-gauge wire: 18-gauge should be fine for runs up to about 20 feet, and you can get away with extrathin 20-gauge wire for shorter runs.

There are a number of methods to conceal long wire runs. One is to snake wires down to the basement or up to the attic, and then back into the listening room (as close as possible to the speakers). This approach is not always practical, however, and it does require some strategic drilling. Another method is to run the wires along baseboards (or a baseboard heater) or molding and around doors and windows; if artfully done, the wires can be all but invisible. If you're handy, you can go a step further and (carefully!) pry the top of wooden baseboards away from the wall about an eighth of an inch, lay the wire in the gap, and then gently tap the baseboards back in place. (This technique also works with door and window trim.) The challenge here is to avoid punching holes in the walls.

An easier and equally professionallooking option is to run the wires under wall-to-wall carpeting. Carefully lift the edge of the carpet up from the tack-strip, run the wires along the perimeter of the room, then press the carpet back into place-without puncturing the wire! Several cable makers offer flat speaker wire, ideal for such applications. Nordost's Flatline (\$2.99 a foot), for example, is a 12-gaugeequivalent Teflon-encased cable that's thinner than a dime. Another novel design is Wire Tape (available from the Wire Tape Co., \$20 for a 16-foot roll), an 18-gauge-equivalent cable that has a peel-back adhesive on one side. The cable is paintable and, according to its maker, can even be wallpapered over.

Since the information carried by the surround channel in a Dolby Pro Logic setup is normally monaural (the main exception being Home THX systems) and delayed by 15 milliseconds or so, there's no need to worry about maintaining phase coherency between the front speakers and the surround speakers. It is, however, worthwhile to experiment with the relative phase of a pair of rear-oriented surround speakers; deliberately inverting the phase of one, for example, may result in a more diffuse surround sound field, which many find desirable. (There will be some loss of low-frequency output, but it's usually not critical, since bass is typically limited in the surround channel to begin with.)

Extension Speakers

Most receivers and integrated amps —as well as many power amps—accommodate at least one pair of extension speakers, commonly used to extend the joys of music listening to another room. In most components, the extension outputs are internally wired in parallel with the main speaker outputs. Functionally, it's the same thing as connecting two speakers to one output terminal.

hile parallel wiring normally yields better performance than other wiring methods, you should keep an eye on the total load (impedance) that the amp or receiver will see. Wiring two nominally 8ohm speakers in parallel, for

example, will produce a nominally 4ohm load ("nominal" because impedance varies with frequency). Two 4ohm speakers in parallel will produce a 2-ohm load; combine one 8-ohm speaker and one 4-ohm speaker, and you get a 2.67-ohm load. [The formula for calculating impedance is $R_T = (R_1$ \times R₂) ÷ (R₁ + R₂), in which R represents the nominal impedance of the speakers in question.] Manythough not all-modern amplifiers and receivers are capable of driving a 2ohm load without complaint, but impedances lower than that are liable to shut down the amp, degrade sound quality, or even damage the amp's output stage.

In its most basic form, hooking up extension speakers involves running a couple of wires from your receiver or amp directly to the speakers, using any of the concealment techniques mentioned under "Home Theater" above. The problem is, whenever you want to adjust the volume, you have to trek back to the main component stack. The simplest solution is to insert a passive volume control between the main receiver or amp and the extension speakers.

Many such controls are L-pad circuits that use a resistor network to attenuate the volume. The small sacrifice in sound quality and power makes them less than ideal for critical listening, but adequate for playing music in



▲ The SCW-UIR in-wall volume control from Niles incorporates a sensor to receive infrared (IR) control signals from a handheld remote control and translate them into electrical signals so they can be shuttled back to the main component rack (usually in another room) via a thin cable. It mounts in a standard doublelightswitch box.



POWER

ON/STANDBY

▲ Datawave's WS-7 portable wireless speaker system (S103) is designed for casual listening in remote locations. It includes an AC-powered radio-frecuency (RF) transmitter with line-level inputs and an 8½-inch-tall enclosure containing a battery-powered RF receiver and a 4-inch "omnidirectional" driver. A stereo version with two speaker modules is available for \$170



The section of the



▲ Sonance's VC100A in-wall volume control \$83 with cover plate) is designed for use with amplifers that have rated outputs between 50 and 100 watts per channel. It mounts in a standard lightswitch box.



DOLBY SUR

Itasher from Niles goes on the source end of an IR-repeater network. It converts electrical control signals from a remotely located IR sensor [like the one in the fin-wall volume control, above left) back into IR control signals so they can be interpreted by the source component. An adhesive-backed surface enables the IRC-2 to be affixed directly over the component's IR "window."

The liny IRC-2 infrared

SUBWOOFER SETUP



iring a subwoofer into a home theater system may require some special attention depending on the kind of bass module you're using. If it's a passive job, hookup is a simple matter of running a single speaker cable from the subwoofer to an outboard amplifier (which is usually tethered to an electronic crossover). But when it comes to powered subwoofers, which are far more popular, you usually have two connection options: speaker level or line level.

More often than not, the speaker-level connection is the better choice. Many powered subs have a built-in two-way crossover that's accessible only via the speaker-level inputs. The line-level inputs typically provide access only to the low-pass section of the crossover, allowing the main speakers to reproduce all of the bass—which may not be a good idea (especially if you're using tiny satellite speakers with even tinier poof!—woofers).

In a speaker-level hookup, amplified signals from the receiver/amp's main speaker outputs are fed into the subwoofer via conventional speaker wire. Low frequencies are split off by the crossover, stepped down to line level, and directed to the sub's internat amplifier and, ultimately, to the bass speaker; frequencies above a predetermined point (usually 80 to 120 Hz) are passed back to the main stereo speakers. The impedance of the subwoofer's crossover usually has little effect on the overall load seen by the receiver or amplifier, which remains essentially that of the main speakers.

To make this type of "loop-through" connection, you need four speaker wires of the appropriate gauge, quality, and length: two between the receiver or amp

and the subwoofer and two between the subwoofer and the main speakers. Since you can put a separate subwoofer just about anywhere without compromising sound quality (provided the crossover point is low enough to prevent localization), you may wind up needing a substantial amount of cable. For example, a subwoofer placed in a corner 12 feet from the main system might require two 12-foot lengths to the receiver or amp, a 6-foot length to one main speaker, and an 18-foot length to the other speaker. The trick to this type of layout is that the appropriate gauge for each wire length is based on the length of the longest continuous segment-in this case, 30 feet. In other words, a minimum of 14-gauge wire should be used for each individual run.

The second advantage of a speakerlevel connection is its relative immunity to interference. Low-voltage line-level signals are much more susceptible than amplified speaker-level signals to picking up hum, noise, and radio-frequency interference (RFI). Of course, the linelevel option may be the only choice if your system employs multiple power amps and an outboard electronic crossover (or one that's built into a surround processor or preamp), and it may be the preferable one if the subwoofer is located close to your electronics. For line-level runs exceeding 8 or 10 feet, be sure to use high-quality, fully shielded cables: Look for top-grade metal RCA connectors, heavier weight, and braided internal shielding in place of, or in addition to, the foil wrap used in most inexpensive cables. One other tip: Keep line-level runs well away from AC power lines, speaker cables, or other house wiring. _D.K.

the kitchen or on the patio. Most fit in a standard lightswitch-size wall box and are easy to install—provided you're reasonably handy and can follow instructions. Boston Acoustics, Niles Audio, Sonance, and other speaker makers and vendors of multiroom equipment sell in-wall volume controls for about \$30.

Adding more than one pair of extension speakers usually requires the use of a switching device for separate onoff control of different pairs. Many switchers include impedance-compensation circuitry so that you can play three or more speaker pairs at once without placing undue stress on your amp or receiver. Speaker switchers are available from Video Link. Sonance, Niles, and Russound, among others. For elaborate multiroom systems with multiple speaker pairs, different wiring systems are possible (70-volt transformer-based designs, for example), but installation requires specialized knowledge, so it's wise to consult an experienced custom installer.

Multiroom Mania

These days, it's relatively easy (but potentially expensive) to go beyond a simple extension-speaker setup by teaming a multiroom controller of some sort with a multichannel amplifier capable of driving two or more remote speaker pairs with full fidelity. "Dual-zone" or multiroom receivers (or integrated amps) have become a popular entry-level option, because in addition to extra amp channels and speaker outputs they provide varying degrees of control over the main system from a remote listening area. Such receivers are available from Denon, Onkyo, Pioneer, Yamaha, Carver, and others.

Unlike ordinary receivers, multiroom models have extension-speaker outputs endowed with independent volume controls, and in some cases a built-in infrared (IR) repeater lets you operate the receiver from a remote location. The repeater works like this: An infrared "eye" in the remote room receives IR signals from the receiver's handheld remote and translates them into electrical signals, which are shuttled back to the receiver via a wire that plugs into a special rear-panel connector. The sensing eye is usually available as a \$60 to \$100 add-on or as part of an accessory kit that often includes wire. Most multiroom-receiver makers also offer an IR-flooding transmitter for \$130 or so that will let you control other components in the main



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The payoff of an intelligent multiroom system is that you have effectively cloned your hi-fi in another room: You can adjust volume and operate source components without leaving the room. The downside is that running speaker and control wires (in the case of full-remote multiroom lavouts) can be a lot of work. If you have any doubt about your handiness, it's probably best to leave the wiring chores up to a custom installer, or perhaps an electrician. (Speaker wiring is fairly insensitive to interference from other electrical wiring, but the same may not always be true of control wires.)

Some wiring scenarios are more manageable than others. For example, in a single-story dwelling, it is sometimes possible to run wires up into a dead-space attic and back down into the appropriate area without too much hassle. The same trick-in reversecan be applied to homes with a basement. Still, you may find that running wires along baseboards or molding is the path of least resistance. Concealing wiring inside existing walls is perfectly possible, but that's usually more than the average homeowner is willing to tackle, as it involves considerable (and laborious) drilling, cutting, wiresnaking, and replastering or sheetrocking.

When wiring remote rooms, it can be very tempting to use thinner, more flexible wire. Don't. As noted earlier, you can maintain reasonable performance with 18-gauge speaker wire, but only up to about 20 feet; beyond that, you should use at least 16-gauge wire for runs up to 40 feet or so and 14gauge up to a practical limit of perhaps 100 feet. Here's another point to keep in mind: Any wires routed inside walls or flooring may be subject to local fire, building, or electrical codes. Be sure to check with your town's buildingcode office or fire department before running any wire.

hether you're doing a simple extension-speaker run or laying the infrastructure for an elaborate multiroom A/V network, it all boils down to the basics. Just make sure you do an honest appraisal of your handyman abilities *before* you pick up a drill or start cutting into your ceiling. It may be that watching all those episodes of *This Old House* has finally paid off. Then again, it may not

CUTTING THE CABLE

Running wire to a remote set of speakers is always a challenge, occasionally a nightmare. The ideal solution is to cut the Gordian knot: Eliminate the wires.

Wireless speakers of various sorts have been offered over the years, including systems that make use of a home's existing AC wiring and designs that use infrared light as the transmission medium. Recently, however, a new and technically superior wireless-speaker avenue has opened up: radio-frequency (RF) transmission using the 900-MHz band recently made available for such applications by the FCC. Unlike systems that tap into a home's existing wiring, RF systems using the 900-MHz band are theoretically capable of sound quality surpassing that of FM broadcasts. And unlike infrared schemes that work only when there is a clear line of sight between speaker and transmitter, such systems have operating ranges of more than 100 feet.

Recoton was the first company to bring a an RF wireless-speaker system to market. Its W440 system (\$300) includes a pair of compact, powered speakers and an AWACS-styled 900-MHz transmitter; receiving circuitry and a 10-watt amplifier are built into each speaker. To hook it up, you simply connect the transmitter to the outputs of a receiver, preamp, or source component (using ordinary RCA-type interconnects) and plug each speaker into an AC wall outlet. That's it—no other wiring is necessary. Frequency response is given as 50 Hz to 15 kHz, signal-to-noise ratio (S/N) as 60 dB, distortion as 2 percent, and channel separation as 30 dB.

JBL recently entered the wireless arena via its new Sound Effects line of mix-andmatch speakers and amplifiers. Included in the lineup is the Take 2 RF transmitter/ receiver package (\$499), which is designed to transform any speaker pair into a wireless duo. The transmitter features two stereo inputs and can broadcast two pairs of sterep channels at once (though each reception site requires a separate RF receiver). So you could simultaneously send stereo signals to two remote rooms, or to one remote room and a pair of surround speakers in a home theater setup. Additional Take 1 RF receivers are available for \$249 apiece.

The system has ten selectable codes to avoid interference from neighboring wireless systems or a nearby 900-MHz cordless telephone. The quoted specs are impressive, including frequency response of 20 Hz to 20 kHz - 3 dB and S/N of 95 dB. JBL offers several other wireless options, including the Magic Two package (\$649), which integrates a pair of speakers, amplifiers, and a wireless receiver in a movable stand/base that has a carrying handle.

It seems likely that other speaker companies will soon jump on the 900-MHz RF bandwagon. It's also possible that before long some astute engineering type will combine 900-MHz technology with perceptually coded digital audio to produce near-CD-quality wireless speaker systems or headphones. Stay tuned. —D.K.



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SPEAKERS FOR HOME THEATER

Extra channels plus extra speakers equal higher fidelity ... or do they?



or my sins, I was once assigned to set up the "ultimate"

demonstration-ultiquadraphonic mate circa 1973, when four-channel sound was new and exotic and hadn't yet become one of the biggest flops in audio history. The room was appalling: a large, perfectly square hotel ballroom with vast marble and plaster walls broken by windows and mirrors. Into the corners of this acoustic nightmare were placed four huge speakers, aimed at the 200 or so chairs in the middle of the floor. Attached to the speakers were several kilowatts of power, an elaborate switching network, and playback gear for four types of quad recordings, including fourchannel tape. It was one serious rig!

And, by any rational standard, it sounded terrible. The crowd didn't

MASTERS

mind, though, probably because they got what they came to hear: There was sound happening all over the place, and most of them had never experienced that before. In those days, the aim of four-channel equipment designers was to be able to produce a separate, identifiable signal from each of the four speakers, and demo material was usually chosen to display that capability. The effect was rather like sitting in a nightclub and suddenly hearing somebody playing trombone from the bar. Disconcerting, but impressive the first time out.

Ironically, ours was one of the better quad demos. Very few people had heard a good one—or even a bad one. Four-channel systems were notoriously tricky for dealers to set up and run, so few of them even tried. And there was considerable consumer resistance to the whole thing anyway, based partly on the belief that it was all a scam to sell speakers, partly on the notion that, since we don't have four ears, we don't need four speakers.

The Depth Wish

So quad died, vanquished by multiple incompatible systems—and by misconceptions. The greatest was the idea that anyone *wanted* to hear instruments from all sides—to be in the middle of a musical group on stage rather than at a comfortable distance in the audience. But the people who started it all had no such intentions. Four-channel sound had a legitimate purpose, to increase the reality of the listening experience—fidelity, in short.

ive music consists of a combination of direct sound-what the instruments are playing-and a complex mixture of reflections off the walls, ceiling, and floor of wherever the performance takes place. The acoustic ambience is a very important part of the overall sound. but, while conventional two-channel stereo can reproduce some of the ambience and provide a sense of width, it must rely on the acoustics of the listening room for depth. Most rooms are too small to create a realistic sense of space, however, so although it may not have been obvious from the demos, the original aim of four-channel sound was to bypass the listening room and reproduce the actual acoustics of the concert hall, encoded on extra audio channels and played through a pair of rear speakers. When it worked, quadraphonic sound could produce a remarkable sense of realism, but the technology of the 1970's

wasn't really up to the task, and quad recordings tended to be sonically compromised.

In addition, speakers in those days were usually fairly bulky, and the smaller they were, the more inefficient they tended to be. As a result, adding rear channels was expensive in terms of both listening-room real estate and electrical power. Nevertheless, a small but hardy band of believers felt the extra depth was worth the cost, and "three-dimensional" audio never really died. Instead of literally reproducing ambient material encoded in special records, though, most systems simulated ambience by means of a variety of specialized components. such as digital delay lines and analog "bucket-brigade" devices.

While those techniques were fairly effective, they were primitive by today's standards. The use of extra channels really came of age only with the introduction of digital signal processing (DSP), which enabled us to create sound fields of impressive realism—still simulated, to be sure, but extremely sophisticated and flexible. The age of Axl Rose in Westminster Abbey had arrived.

Every Night at the Movies

Still, multichannel home audio would probably have remained a curiosity had it not been for the arrival of movies with Dolby Surround soundtracks. Because movie studios used existing two-channel prints for the video versions of their films, and because those prints were Dolby Surroundencoded for theaters, the videocassettes and videodiscs had the extra information too. When people realized this, they were anxious to retrieve the surround information and began adding decoders and rear speakers to their systems.

The original decoders—both generic devices and those labeled Dolby Surround—simply extracted the mono surround information (in the form of an L - R signal) and fed it to a pair of surround speakers, usually positioned behind the main listening position. Soon, however, Dolby Pro Logic decoders became widely available, both freestanding and—mainly—as a builtin feature of A/V receivers.

Dolby Pro Logic provided yet another channel of information—a center signal containing most of the dialogue plus any other sounds that take place midscreen. As it turns out, while you can get away with using fairly modest speakers for the surround channel, the requirements for the cen-



▲ Magnepan's 65-inch-tall MG-10 (\$1,175 a pair) can be used for the main or surround channels. The dipole speaker has a planar-magnetic bass element with a low-frequency limit of 80 Hz and a quasiribbon tweeter.

▼ NHT's 9¼-inch-tail HDP-1 dipole speaker (\$380 a pair) has a 4½-inch woofer and two 3-inch drivers—one in front and one in back. Its narrow 105-Hz to 10-kHz bandwidth is designed for surround applications.


SPEAKERS FOR THE SURROUND CHANNEL



▼ B.I.C. America's two-way Venturi V52 (\$149 a pair) can be used as a main or surround speaker. The 11¼-inch-tall cabinet is suitable for bookshelf or wall placement.



The dispersion of Fosgate-Audionics' THX-certified SD 180 dipole speaker (\$1,850 a pair) can be manipulated with the company's Model Three processor.



 The two 3½-inch drivers used in Atlantic Technology's Model 154 SR (\$149 a pair) are angled for wide dlspersion. Frequency response of the 7½-inch-tall speaker is given as 120 Hz to 12 kHz ± 3 dB.

> Definitive Technology's 11-inch-tall BP2 (\$500 a pair) is a bipolar speaker with frontand rear-facing woofer/tweeter pairs. Its 55-Hz to 28-kHz bandwidth makes it suitable for either frontor surround-channel use.







▲ The 10³/₄-Inch-tall Encore II (\$399 a pair) is a wallmountable, two-way dipole. Available by mail order from Audio Concepts Inc. of La Crosse, WI.

▼ The Surround (\$400 a pair), a dipole with a woofer and two side-firing drivers, is sold factorydirect by Cambridge SoundWorks of Newton, MA.





▲ Snell's SUR 800 dipole speaker (\$1,399) is designed to be flush-mounted in a wall. A properly placed pair is said to achieve an enveloping sound field.

▲ Altec Lansing's THXcertified AHT-2100 (\$900 a pair) uses an angled dualmidrange/tweeter combo on each side and two woofers in the middle. ter speaker are much more stringent. Many home theater setups have been built by adding a surround decoder and extra speakers to an existing stereo system. Typically, the existing speakers are used for the main left and right channels, but often the center speaker is quite dissimilar in both size and sound character. Size is often determined by the need to place the new speaker as close as possible to the video monitor, and sound quality is often a secondary consideration.

Consider, however, that Dolby Pro Logic, which extracts signals that are identical in the two input channels and feeds them to the center, creates true three-channel stereo. Just as you wouldn't use mismatched speakers in conventional stereo playback, you shouldn't with Pro Logic either. For one thing, as sounds move about the soundstage, they are likely to change in character from one position to the next. For another, the information carried by the center channel-most dialogue, for example-is usually the most important of all, so it deserves as good a speaker as the main stereo channels, or at least one that doesn't differ significantly in tonal balance.

n recognition of that requirement, most A/V receiver manufacturers now provide as much power for the center channel as for the front left and right, and some high-end systems, including those comprising THX-certified components, use identical speakers across the front. For most applications that may be a bit extreme, as well as hard to accommodate physically, so provisions have been made for some benign compromises. For one thing, in its Normal mode Dolby Pro Logic leaves all the real bass (below 100 Hz) in the front left and right channels, so the center speaker can be smaller than the left and right speakers. It is important that the center match the others at higher frequencies, however, and a smaller or center-channel-specific model from the manufacturer of the main speakers is often a good bet (but not alwaysalthough various speakers from the same company may exhibit a strong family resemblance, that's not universally true, so listen carefully before you buy).

Using your existing equipment may not be appropriate, however. You might want to keep listening to music in the living room and put the video system in the family room, for instance. Or your present speakers may simply not be suitable: If they're not Choose home theater speakers with compatibility in mind rather than trying to match them after the fact.

shielded (and few older models are) but must be placed close to the television, the field created by their magnet assemblies will distort the picture. Center speakers always have to be shielded to prevent this, and sometimes, depending on how close they are to the TV, the main speakers must be shielded too. If yours are not, they may have to be replaced.

It's important to choose speakers with compatibility in mind, rather than trying to obtain a match after the fact. But coming up with speakers that sound the same takes some care; even some speakers that are designed to work together fall short of the mark, so a lot of comparative listening is necessary. If all else fails, forget dedicated center speakers and buy one that's identical to the main pair.

With full-size speakers that might not be a practical solution, but more and more surround systems use the satellite/ subwoofer configuration, which allows much more flexibility. Sat/subs take advantage of the fact that sound behaves very differently at low and high frequencies. Imaging-the correct placing of sounds on an imaginary stage—is a function of the midrange and treble, and it demands careful placement of the speakers to create the appropriate illusion. The low bass, on the other hand, does not contribute to imaging and is practically omnidirectional (the lower the crossover point, the better), so the woofers can be positioned both to be unobtrusive and to minimize excitation of awkward resonances in the listening room.

In many rooms, a single low-frequency module—usually called a "subwoofer" even though most don't go down any further than the woofer in a conventional speaker—will do for the whole system, although not always (see "Surround-Channel Bass" on page 65). The advantage of this division of labor is that the big box can be hidden and the small satellites carefully placed to achieve optimum imaging. Sub/sat systems vary widely in their performance, but the best of them are very good.

Your system's overall tonal balance will be determined largely by the front speakers, but the surround speakers are important as well. The ideal would be to use exactly the same speakers for the surround signal as for the main channels, and certainly that would prevent timbral shifts as sounds move from one place to another. Except in systems based on satellite/subwoofer combinations, however, it's usually necessary to make some compromises on that score, so the main thing is to shoot for the closest match possible.

One constraint will likely be the locations of the surround speakers. Although often thought of as "rear" speakers, as in quadraphonics, surround speakers should ideally be placed to the sides of the main listening position, rather than behind it. That may make mounting awkward, which in turn may well determine which speakers you can accommodate. Depending on your room, you may be restricted to smallish models that can be affixed to the walls with brackets. In-wall speakers are sometimes a good solution as well, provided you're prepared (or able) to cut holes in your walls and are willing to commit to inflexible positioning. The extra wiring can be troublesome, too; you may want to investigate flat speaker wires or even cordless speakers.

It's reasonable to choose fairly modest speakers for the surround channels because they carry relatively narrow-bandwidth information: The Dolby Surround standard calls for the surround signal to be rolled off below 100 Hz and above 7 kHz, so deficiencies at the extremes may be forgivable in a surround speaker. But before you make too much of a compromise, bear in mind that the sound of the surround speakers should match that of the front speakers as closely as possible within that 100-Hz to 7-kHz range. And more extended response may be desirable for ambience-simulation modes and for future home versions of digital cinema surround systems, such as Dolby SR-D, which has full-range surround channels.

Speaker positioning can be as important as speaker choice. In Dolby Surround, the aim is to create a diffuse

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sound field—one that gives a sense of space and depth but does not draw your attention to the speakers themselves. To achieve this, some surround speakers (including all THXcertified models) are quasi-dipoles with drivers on the front and back of the cabinet wired out of phase, creating a sort of figure-8 radiation pattern, with a null to the sides that is aimed at the listening position. Others are actually "bipolar," which is similar except that the opposite-facing drivers are in phase with one another. These designs result in almost all of the surround sound reaching the listeners after reflection by at least one room boundary, thus simulating the surround effect of a well-set-up theater. Much the same effect can be produced with conventional speakers by aiming them at the ceiling or into a corner and adjusting the level accordingly. (A few surround speakers use angled baffles to achieve this effect.)

Although side placement of surround speakers is usually preferred for ambience enhancement of music as well as for reproduction of movie soundtracks, some processors have music and even movie modes that require the surround speakers to be placed at the back of the room for best results, and they may provide for additional "effects" speakers in the front as well. Make sure you know what speaker configuration the manufacturer of your surround receiver, amplifier, or processor recommends before you start looking for speakers, as that can make a big difference in your range of choices. In fact, it's a good idea to consider what speaker placements are practical in your home before you buy any surround-sound processing equipment. Otherwise, you could wind up having to make too many compromises in speaker placement to accommodate demands that don't quite jibe with what your room will allow.

n the other hand, don't be dismayed if you can't assemble a textbook-perfect system. Some compromise is almost inevitable, and it need not make a big dent in your enjoyment of the result. Fortunately, the range of equipment available for surround-sound reproduction in its various guises is very broad. It's just a matter of finding what you need. Once you have, your listening experience can be dramatically improved.

That's what I was trying to demonstrate in that horrible room twenty years ago!

SURROUND - CHANNEL

BASS

ome time ago we ran a set of response plots indicating large amounts of bass in the surround output from a Dotby Surround movie soundtrack. That was surprising, since Dclby Surround encoders include a sharp filter to remove frequencies below 100 Hz from the surround channel, and it set off an intense round of speculation about why low frequencies were showing up there.

One theory that has been offered is that soundtrack engineers have been circumventing the filter in the encoder to obtain a more dramatic effect. But the more we investigated the less plausible that explanation became, if only because the surround speakers normally used in theaters and in the dubbing stages where soundtracks are mixed don't have enough bass extension to reproduce the extra information.

So why is it there? The answer seems to be that it's there by accident. Dolby Surround is based on what's known as a 4-2-4 matrix. Four input channels-left front, center front, right front, and surround-are mixed down into a left/right stereo pair in such a way that the center and surround channels can be extracted on playback with a suitable decoder. Unfortunately, the extraction can never be perfect: It is not possible to completely separate the four original channels from each other once they have been combined, even with Dolby Pro Logic decoding, which enhances separation considerably over what is possible with simple passive decoding.

The short explanation, then—the one backed by both Dolby Labs and Lucasfilm and by the evidence of the dubbing and cinema sound systems used to create and play back film soundtracks—is that deep bass in the surround channel is leakage from the front channels, not a deliberate element of the mix. Although reproducing this stray bass may beef up the sound in an appealingly visceral way, it's not, strictly speaking, an accurate portrayal of the original soundtrack.

We're not completely out of the woods yet, though. For one thing, even if surround bass isn't meant to be reproduced, your amplifiers will try to make your speakers play it if it is present, wasting power in the process. And if your surround speakers have small woofers, as most do, they may be overdriven into distortion. Bigger surround speakers or a subwoofer in the surround channel would solve the powerhandling problem, but that's not a very attractive solution.

A better approach would be for Dolby Pro Logic decoders to filter deep bass out of the surround channel. Dolby doesn't require that, unfortunately, but Lucasfilm does recommend it for Home THX processors, and some ordinary Pro Logic decoders roll off the lew ends of their surround outputs to some extent as well. Depending on the accessibility of your decoder's surroundchannel outputs and your amplifier's surround-channel inputs, you might be able to add such filtration to your system.

Dolby's next-generation surround-sound system, called SR-D, is a discrete sixchannel digital implementation based on the company's AC-3 coding technique. SR-D has separate left and right full-range surround channels complementing the three front channels and a dedicated subwocfer channel. Since AC-3 has essentially perfect channel separation, it is not subject to accidental bass or anything else in any channel, so when this system comes to home media there will be no question of what should be reproduced where. Even then, however, you won't have to have full-range surround speakers. Just as now, you will be able to get excellent results with, for example, five small speakers and a subwoofer to handle all the deep bass-which is good news, since it means that the speakers you buy today won't become obsolete the day AC-3 rides -Michael Riggs into town.

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CIRCLE NO. 11 ON READER SERVICE CARD



To trace the role that magnetic tape recording has played in the development of high-fidelity home music reproduction, we must begin a few years before STEREO REVIEW came on the scene. We must go back to the days when there were no cassettes, no CD's, no LP's, and when stereo and the transistor were yet to become commercial realities.

Directly after World War II. John Mullin "liberated" and sent home all the parts for two German Magnetophon recorders, together with some fifty reels of Luvitherm (plastic)based, black-oxide (magnetite) BASF tape. The machines ran at 30 inches per second (ips) and had a frequency response that could be extended (with

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proper tweaking) to 15 kHz. With these, Mullin was able to stun the broadcast and record industries in 1946 with a machine that could easily hold a half-hour radio broadcast on tapes that could be edited with a simple cut-and-splice operation. Although wire recorders had been widely used in this country for dictation and phone-answering machines, tape was something new.

ape's first job here was to prerecord the nationwide broadcasts of the Bing Crosby radio series of 1947-1948. By the end of that series, Ampex had produced its first recorder (the Model 200) and 3M had produced its first batches of Scotch 111, the red-brown ferric-oxide tape that was to be the standard for years to come.

When CBS invented the long-playing record in 1948, tape became the backbone of another budding industry. You can't edit the undulating groove that is cut into a blank lacquer master disc, which is where the record-making process begins. Yet how many musicians can play for more than 20 minutes—the length of an LP side—without errors? In a modern recording there can easily be a hundred splices, inaudibly joining together parts of different "takes," in the master tape from which the lacquer master disc side will be cut.

Tape also offered the first stereo, thanks to Magnecord, at the 1949 Audio Fair, and by 1954 RCA (soon followed by others) was selling prerecorded open-reel stereo tapes to the burgeoning community of high-fidelity music lovers. The year 1958 saw the birth of both the stereo LP and *HiFi & Music Review*, now STEREO REVIEW.

In its first two decades, hi-fi tended to be dominated by the same kind of do-it-yourself, technically inclined superenthusiasts one encounters more

often today among computer hobbyists. Many of us built our own speaker systems and wired together much of our equipment from kits or schematic diagrams. And many of the high-end tape decks offered to audiophile recordists in those early days were actually professional studio machines. This magazine's annual Stereo/HiFi Directory listings included, for example, the Magnecord PT-6 (a broadcast workhorse) and the Ampex 601 (a magnificent machine for on-location recording). And it was on the strength of Julian Hirsch's April 1965 rave review that I bought my still-serviceable half-track stereo Magnecord 1022.

But most of the stereo tape recorders in the home market differed from their professional cousins in three major respects: (1) They used quarter-track rather than half-track heads, (2) they operated at $7\frac{1}{2}$ or $3\frac{3}{4}$ ips instead of 15 or $7\frac{1}{2}$ ips, and (3) they accepted a maximum reel size of 7 inches rather than $10\frac{1}{2}$ inches. With a half-track head, the two channels of a stereo signal, each 0.08 inch wide, use up the entire $\frac{1}{4}$ -inch width of the tape. (The remaining space between the two tracks is left unrecorded to prevent

crosstalk between the channels.) In 1958, Shure introduced quarter-track (0.043-inch) heads, which enabled separate stereo recordings to be made on each "side" of the tape.

Reducing the expense of tape by half had obvious consumer appeal, but its 3-dB penalty in signal-to-noise ratio (S/N) was too steep a price for the professional. As the need for more tracks (four, eight, sixteen) arose in studio recording, the preferred solution was to widen the tape itself to V_2 , 1, and 2 inches rather than give up the 80-mil track width.

In studio recording, 15 ips has always been the tape speed of choice. That more or less required professional machines to be built with the heavyduty motors and transports needed to handle $10\frac{1}{2}$ -inch tape reels. A 7-inch reel of standard-thickness (1.5-mil) tape has a 1.200-foot capacity, and at 15 ips that yields an uninterrupted recording time of only 16 minutes (24 minutes using "extra-length" 1.0-mil tape). Twice as much tape (and twice as much recording time) can be put on a $10\frac{1}{2}$ -inch reel.

On the other hand, at 71/2 ips a 7-inch reel can hold a useful 32-minute (or 48minute) length. Making 71/2 ips the standard speed for the home recordist saved on tape and construction cost, but again there was a price to be paid. Signal-to-noise ratio took another hit, and this time frequency response suffered as well. The response of an early consumer-oriented open-reel deck running at 71/2 ips was likely to be down 3 dB at 10 kHz (and down 3 dB at 5 kHz if it was running at 3³/₄ ips), with S/N typically around 45 to 50 dB. As tapes and heads gradually improved. however, the upper frequency-response limit at 71/2 ips gradually rose, to 12 kHz, 15 khz, 18 kHz, and finally to 20 kHz and beyond.



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The problem of audible tape hiss remained, however, even at the professional, mastering level. One of the most significant high-fidelity developments of the decade, therefore, was the introduction, in 1967, of the Dolby A noise-reduction system. A professional system in both performance and price, Dolby A split the audio spectrum into four frequency bands and applied compression in recording and reciprocal expansion in playback to each of them independently. The result was that tape hiss, which previously could be heard above the vinyl surface noise of a good LP, was lowered by some 10 dB at frequencies below 10 kHz and by 15 dB at 15 kHz.

Even before Ray Dolby revolutionized open-reel recording, Philips of the Netherlands had introduced the first Compact Cassette recorder. Operating at 1% ips, with tape enclosed in a in 1965. The battery-powered recorder got little notice in the hi-fi world, though it was listed (with a rated frequency response of 100 Hz to 7 kHz \pm 3 dB) in the 1966 *Stereo/Hi-Fi Directory*. In those days, attention was focused on at least four competing formats of plug-in tape cartridges. The Lear eight-track proved the longest surviving of these, but none of them was capable of true high-fidelity performance. For serious tape recording and listening, open-reel remained the medium of choice.

By 1970, the cassette, though still considered "lo-fi" by most audiophiles, could no longer be ignored. But cassette decks had to overcome two fundamental problems: poor high-frequency response and poor signal-tonoise ratio. Two independent developments now combined serendipitously to bring the cassette medium to the



miniature reel-to-reel system, the cassette recorder Philips introduced in 1964 was intended as nothing more than a portable dictating machine. Philips—and tape manufacturers were surprised when people started recording and playing back music on these machines, creating a sudden demand for blank cassettes.

It was under the Norelco (North American Philips) brand name that this first cassette machine, the Carry-Corder 150, came to the United States brink of full membership in the high-fidelity community.

In 1969, Du Pont invented chromium-dioxide (CrO_2) tape, which inherently had far better high-frequency response than any existing ferric-oxide formulation. Indeed, it was so hot at the high end that a new playback equalization curve (70-microsecond rather than the standard 120-microsecond) was needed to take full advantage of its characteristics. The new tape also required an increase of about 50 percent in bias current, which is used during recording to lower distortion and (partly) to control high-frequency response. Du Pont licensed BASF to make chrome tape in Europe and Sony to produce it in Japan, which, of course, set other Japanese tape manufacturers in search of a competitive equivalent. TDK SA, Maxell UD, and similar ferricobalt "chrome-equivalent" formulations were the eventual result.

he second important cassetterelated development was the introduction, in 1970. of the Dolby B noise-reduction system. A low-cost, single-band system for use in consumer decks, Dolby B provided 8 to 10 dB of very much needed noise reduction for frequencies above 500 Hz. Dolby B made its first appearance in the shortlived KLH 41 open-reel recorder, but outboard adaptors were soon available (at rather high prices) for adding the system to either cassette or openreel machines. The real breakthrough, however, was combining Dolby B with chrome-tape bias and EQ in a reasonably priced, reliable cassette deck.

The deck that did that, and thereby changed the face of home recording, was the Advent 201. Now a classic, it was the best cassette deck of its time. With chrome tape, its record/playback frequency response measured ± 2 dB from 31 Hz to 15.5 kHz, and its S/N (with Dolby B) was a then-phenomenal 57 dB.

For those of us who remained skeptical, the cassette era unquestionably began in 1973 with the introduction of the Nakamichi 1000, the first threehead cassette deck. Its frequency response extended beyond 20 kHz, and with Dolby B its S/N measured better than 62 dB. But that wasn't all: Thanks to a unique closed-loop, dual-capstan transport, it reduced flutter to an unheard-of (and unheard) 0.07 percent. Of course, it cost \$1,100-three times the price of most other good cassette decks-but finally there was a cassette deck that was capable of making recordings audibly indistinguishable from the original input (with some material, at least).

Tape-related developments in the next few years continued, but at a less frenetic pace. Dolby C doubled the noise-reduction power of Dolby B in 1977 and has since become a standard feature of high-quality cassette decks. And in 1979 Dolby introduced its HX headroom-extension system, which

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varied bias automatically in response to signal content to minimize highfrequency losses in loud passages. Although the original HX circuit met with little success, B&O's subsequent refinement of it, Dolby HX Pro, is now as commonplace as Dolby C. Even the abortive attempt to popularize guadraphonic sound had the lasting consequence of leaving in its wake a number of discrete four-channel open-reel decks that could meet the needs of amateur recordists interested in studio-type multitracking.

he next major development in tape itself was the September 1978 introduction of 3M's Metafine IV, the first metal-particle cassette tape. The tremendous high-frequency potential of this tape made it possible for the first time to check record-playback frequency response at a 0-dB recording level rather than at -20 dB. At the same time, its requirement for a much stronger bias signal mandated improvements in tape heads and associated circuitry. Faced with the prospect of putting three-position (ferric, chrome, and metal) bias/equalization switches on cassette decks, the industry standardized a system of cutouts on the back of the cassette shell that makes possible automatic detection and switching for the tape type in use.

Meanwhile, the seeds of another revolution were quietly being sown. From the mid-1970's onward, while consumer audio was preoccupied with cassettes, recording studios began to turn from making their master tapes in conventional analog form to recording them digitally. The CD revolution of the 1980's was thus preceded by a decade of professional experience with digital recording.

The compact disc's great success led ultimately to the development of a home digital recording system-digital audio tape, or DAT-which

emerged around 1987. Unfortunately, large-scale import of consumer DAT decks for sale in this country was held up for more than two years as record companies threatened to sue DAT makers over copyright protection for CD's. Nakamichi's Model 1000 DAT recorder did finally go on sale at the beginning of 1990, but its \$10,000 price tag made it more a professional than a consumer product.

By the time the political barriers to home digital recording were overcome with a royalty agreement, interest had turned from DAT to two new digital recording formats: Digital Compact Cassette (DCC) from Philips and Mini-Disc (MD) from Sony, both of which use perceptually based encoding algorithms that dramatically reduce datastorage requirements compared with

The Philips DCC900

the DCC tape format.

conventional, linearly encoded digital recordings. By reducing the number of bits recorded to just those needed to represent audibly significant audio information, DCC decks can use cassettes of the same size as their analog counterparts running at the same speed. This amazing achievement enabled DCC decks to be designed to play existing analog cassettes as well as to make and play digital recordings. In the case of MD, the reduced storage requirements enable a disc much smaller than a CD to hold the same amount of music.

The developments STEREO REVIEW has chronicled in its first thirty-five years have been in large measure a tale of tape. Today's serious recordist can still choose open-reel machines of unprecedented quality if his interest lies in recording and editing live sound. And now that Dolby's advanced Stype noise reduction is finally becoming widely available, three years after its introduction, cassette lovers can enjoy a level of full-frequency, noisefree performance that could not have been imagined previously. DAT machines are solidly entrenched in professional recording and among semiprofessionals and hobbyists who insist on achieving perfect correspondence between input and recorded result. And DCC or MD may in the end prove most popular among the majority of music lovers.





ell me again," asks the film-music legend Elmer Bernstein over the telephone from Los Angeles. "What is the purpose of this interview?" Informed that it's occasioned, in part, by the release of "Bernstein by Bernstein," a Denon CD collection of his classic film scores, his reaction is somewhat surprising.

"Don't tell me they finally got that out," he says with a hearty laugh. "I did that months ago."

If Bernstein seems more preoccupied with the present than the past, that's understandable. In fact, at seventy-one, an age when most Hollywood veterans have long since packed it in, Bernstein is not only as prolific as ever (this year he's already given us music for Mad Dog and Glory and Neil Simon's Lost in Yonkers) but is working at the peak of his creative form. That's a remarkable achievement for a man who scored his first feature film in 1951 and has since scored over two hundred of them, from classics like The Man with the Golden Arm, The Magnificent Seven, and The Great Escape to such seemingly unlikely fare as National Lampoon's Animal House and the spoofy Airplane. Typed at various times in his career as the right man for a jazz score (Walk on the Wild Side), as a purveyor of wide-openspaces cowboy music (True Grit), or even as a hip comedian (Ghostbusters), Bernstein has worked in nearly every film genre and with most of the

PHOTO: LUCY DICKENS/DENON RECORDS



Y STEVE SIMELS AND GERALD CARPENTER



the Bible Belt—scenes from some of Elmer Bernstein's greatest hits (counterclockwise from above): The Ten Commandments, My Left Foot, The Man with the Golden Arm, The Magnificent Seven, The Grifters, To Kill a Mockingbird



best directors in Hollywood, a list that these days includes an ongoing relationship with everybody's favorite American director, Martin Scorsese. (In fact, when we interrupted him for this interview, the composer was hard at work on Scorsese's forthcoming adaptation of Edith Wharton's *The Age of Innocence.*)

ot surprisingly, though he loves his chosen profession—"I happen to think that writing film music is a pretty sophisticated branch of composition," he says—Bernstein never planned to go into such a specialized line of work. Born April 24, 1922, in New York City, he wanted to be a pianist for most of his childhood—until a chance encounter with another great American musical figure opened his eyes.

"When I was about twelve," he recalls, "my piano teacher took me to Aaron Copland, who was then living on University Place by NYU. I played him these sort of waltzes I was writing, and he encouraged me to keep at it." After studying at Juilliard under Stepan Wolpe and Roger Sessions, he was still not sure exactly what he wanted to do in music. "It wasn't like today," he observes, "when it seems like half the world is trying to be a film composer." A decision was made for him by Uncle Sam: There was a war on, and he was drafted.

'How I got into [film composing] was a total accident," he says. "I was called by the Army, and I started to work on propaganda radio shows they did. In those days I was considered something of an expert on American folk music, so my job each week was to do an orchestral arrangement of a folk song for each broadcast. Then one day the fellow who did the background scores for the dramas on the show disappeared, and they needed somebody to write a score overnight. So they called me and asked if I could do it, and I said yes. One thing led to another, and when Millard Lampell, a New York playwright who wrote the scripts for the shows, went to work in Hollywood in 1949, he wrote a script called The Hero and mentioned me to the producer. And that's how I got my first job." (The film, a jeremiad about the American sporting system, was released by Columbia under the title Saturday's Hero.)

Bernstein has worked steadily, on big pictures, pretty much ever since, although he was blacklisted for a year or two in the early Fifties for alleged Communist sympathies. In need of gainful employment, he found himself involved with what are today widely regarded as two of the worst movies ever made, Robot Monster and Cat Women of the Moon. To his credit, Bernstein disavows neither of them. "From a sound point of view, those were absolutely seminal films," he says. "In both of them I used a lot of electronics, or at least such electronics as were available in those days, Hammond organ and a thing called the Novichord, which created quite a sensation. Of course, the reason I was doing those films was that I was under investigation. I was 'pink' enough for the major studios to be afraid of me."

The blacklisting ended in 1955, after Bernstein's commercial breakthrough with Otto Preminger's The Man with the Golden Arm (the theme went Top 20). The same year, the archconservative director Cecil B. DeMille hired him to score his epic The Ten Commandments, a decision that may explain why Bernstein remains a staunch defender of the director's reputation. "I had a great deal of respect for DeMille," he says, "even though politically and culturally we were poles apart. He was a tremendous storyteller. What you might call vulgar was simply his sense of grandeur. But the one thing he understood was where the people are, where their heads are,

so to speak. His films were meant to appeal to 'the people' and they did."

Since the job with DeMille, Bernstein has never looked back, though he hedges a bit when asked if his basic compositional style has changed at all over the years. "Only in the sense that I have probably gotten a bit clearer and simpler in things I do," he says. "I tend to be a bit more direct these days." Still, he's always interested in adding new colors to his palette.

"In the past ten years." he notes, "I have been using more electronics

BERNSTEIN BY BERNSTEIN

(Denon 75288)

Somewhere between a résumé and a greatest-hits album, "Bernstein by Bernstein"—which excerpts thirteen of the composer's film and TV scores provides a fine Introduction to a formidable body of work. From the Marlboro Country neo-Coplandism of The Magnificent Seven to the big-band jazz of The Man with the Golden Arm to the Southern pastoralism of To Kill a Mockingbird, the composer-conducted performances are definitive, and the all-digital sound is breathtaking.

CAPE FEAR (MCA 10463)

Updating Bernard Herrmann's 1961 score for Martin Scorsese's far more intense 1991 remake may have seemed like a thankless task on paper, but Bernstein's adaptation turns out to be the creepiest music of his career.

THE GRIFTERS

(Varèse Sarabande 5290)

Discreet electronics and a sort of Kurt Weill for the Ninetles approach add up to one of the most original works in Bernstein's oeuvre. The recently deleted CD is eminently worth hunting for.

NATIONAL LAMPOON'S ANIMAL HOUSE (MCA 31023)

This 1978 comedy blockbuster began Bernstein's long collaboration with the director John Landis, and while the composer's efforts may be overshadowed on the soundtrack by John Belushi's singing of *Louie Louie*, the Animal House score is more than worth hearing for its witty Brahmslan evocations of academia.

THE TEN COMMANDMENTS

(MCA 42320)

Cecil B. DeMille's kitsch-run-riot sensibility makes this biggest of Fifties blockbusters something to marvel at even now. Bernstein's wonderfully overripe score matches it note for grandlose note. —S.S. in films—subtly, however, so you're rarely aware of them. In the Eighties I started to use the ondes martenot. which is an ancient instrument as these things go, invented in 1928. The score for My Left Foot is full of it." Electronics-synthesizers this time-also showed up in what many consider Bernstein's finest and most unusual recent score, for Stephen Frears's The Grifters. "I made an odd decision about that," Bernstein says. "The film is set in an indeterminate period-Frears carefully avoids saying, 'This is such and such a year.' But if you look closely at the cars and the clothes, you realize it's not today. So I went kind of far back, back to Germany in the late Twenties and early Thirties, to Kurt Weill and Ernest Krenek. Weimar. It gives the score an odd flavor indeed."

hen he gets an assignment, the first thing Bernstein asks is what the function of the score is to be. "Sometimes," he says, "as in The Grifters, the function is just atmosphere-I wasn't supposed to keep the thing going or delineate the characters. But if the score has to be a storytelling device for some reason. then you get into leitmotifs and recurring themes and the like. But I'm very sparse I have to ask myself, if there's music here, why should it be here? And what should it be doing? If I can't answer those questions there shouldn't be music.

Although he declines to cite examples, Bernstein admits he's occasionally been hired to save a picture. "Sometimes people are very open about it," he says. "But there's a definite limit to what we can do. If the film is emotionally thin, we can give it slightly more emotional heft, we can push that side of things a little. We can push the kinetic side of things a lot—if a film seems slow, we can get it going pretty well. It's a lesson I learned from DeMille."

These days Bernstein is learning from Martin Scorsese, a director whose work is light years away from DeMillean bombast. "It's a totally exhilarating experience," he declares. "Ideally speaking, Marty likes to have the score to cut his film to, and for Age of Innocence, the studio allowed me to create a temp score, which Marty had the whole time he was editing. He has a tremendous sense of musical rhythm, he really feels the music breathe, how the life of the music relates to the life of the film, which is very rare." Asked what other directors he'd like to work with, Bernstein pauses for a moment. "I'd like to work with Spielberg," he says wistfully, "who obviously has a tremendous feeling for music. Of course, he has a special relationship with John Williams, and you can't do better than that."

In the meantime, Bernstein is already planning his next score. "I'm going to do another picture for [director] Martha Coolidge, with whom I worked on *Rambling Rose*. It's called *Angie, I Said* and stars Geena Davis." And he sees no end in sight. "I have no plans to slow down." he says matterof-factly. "I don't see any reason to as long as I'm offered things to do."

Still, despite his long and fruitful career, even despite twelve Academy Award nominations (to date he's won only once, for *Thoroughly Modern Millie*), there seems to be just the tiniest bit of regret in Bernstein's voice when he contemplates the way things have worked out for him. "In the United States," he says, "I'm a 'film-music composer.' But when I go to London, I'm a 'composer,' period. That's one of the things I love about working there."





V On A Shoestring

HE first thing that strikes most people about home theater-once they recover from the thrill of being "buzzed" by an alien spaceship—is the typically steep price of admission. A big-screen, multispeaker system can easily run upwards of \$10,000. But as a growing number of homeentertainment enthusiasts are finding out, it is

> possible to assemble a theater at home without sending your bank account into shock.

A perfect example is the simple home-theater upgrade that Media Systems of Boston put together for Burt Scott, a thirty-four-year-old architect who shares a cozy ocean-front condo in a northern suburb of Boston with his wife and eight-month-old daughter. Scott wanted an audio package for his Sony VCR and 32-inch TV that would handle surround sound for both movies and music. It had to be unobtrusive and cosmetically appealing, include a CD player, and, above all, cost \$3,000 or less.

"The challenge was to find components that would be easy to operate, integrate neatly into the system, and look good," recalls Mitchell Klein, president of Media Systems.

The heart of the system is Sony's four-channel STR-GX69ES A/V

receiver, which Klein describes as "a goodsounding piece with good power and very good Dolby Pro Logic steering." Sticking with Sony components to insure remote-control compatibility, he recommended the CDP-C79ES carousel CD changer. "It's great when we're entertaining," Scott says. "Also, my wife likes to be able to shift easily from one kind of music to another." The receiver and

changer mesh perfectly with Scott's SLV-585 VHS Hi-Fi VCR, and everything fits neatly into the component cabinet beneath the KV-32XBR55 TV-set.

For primary speakers, Klein chose NHT's two-way VT-1's. "They're very attractive. without a big price tag," he says. "They are magnetically shielded, and they sound pretty good, too." Bass is handled by Velodyne's F-1200 servo-controlled subwoofer, which packs a 100-watt amp and a crossover.

"Bass is one of the most important things in any surround system," Klein observes. "You don't cut corners there. While we prefer to put the subwoofer on the same plane as the main speakers, there was no room to do that, so we put it under the coffee table next to the couch and adjusted the crossover to get the lowest point without creating a gap."

Surround signals are handled by a pair of nearly invisible Polk Audio AB-700 in-wall speakers, which are recessed into a soffit that runs around the perimeter of the 16 x 14-foot living room. Running wires to the AB-700's and the subwoofer was the hardest part of the job-luckily, the process was simplified by the purely cosmetic nature of the soffit, "We installed a wall plate behind the TV, ran the wires up into the soffit, and snaked them to the opposite side of the room," Klein explains.

To avoid electrical noise, which often manifests itself as a bass-destroying 60-Hz hum, Klein fed the receiver's main channels to the subwoofer (which has both line-level and speaker-level inputs) and looped the high-pass signal back to the main speakers.

In the surround mode, the TV's internal speakers handle center-channel duties; the speakers are combined automatically whenever the receiver is turned on, thanks to Klein's clever use of a Niles SPK-1 speaker switcher (hidden on the back of the TV cabinet). The receiver's power spread is 100 watts to the main stereo channels, 50 watts to the center, and 50 watts to the surrounds.

Although the final bill came to \$3,200-a wee bit over budget-Scott is not about to complain. "The first night we turned on the surround system we had one of the Star Trek movies in the VCR," he recalls. "We all jumped when the Starship Enterprise roared 3 by. I never realized how great the impact could be. It makes watching TV a real plea--Bob Ankosko sure. Spectacular!"





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CHORNESTOPPERS SHOWSTOPPERS The home theater bandwagon forged ahead, and MiniDisc [MD]

The home theater bandwagon forged ahead, and MiniDisc MD) picked up more support at the 1993 Summer Consumer Electronics Show in June which brought 51,000 retailers, manufacturers, and journalists together in Chicago for a peek at a diverse range of new electronic products. An additional 37,000 folks showed up for the expositions final day, which was open to the public.

BL lured a steady flow of showgoers to an off-site mansion where it demonstrated its new SoundEffects series of mix-and-match A/Vspeakers and components complete with wireless sound opticns, a \$3,000 Home THX speaker package, and the high-end Synthesis Three A/V system in configurations ranging from \$8,000 to \$20,000.

The TV stalwart RCA launched its Home Theater Audio series, while Celestion and McIntosh joined the home theater speaker fray— Ce estion with a \$1,200-and-up series, McIntosh with a \$6,500 THXcertified combo. Even Monster Cable got into the act with a line of THX-certified interconnects and speaker cables based on no-nonseries specifications from Lucasfilm's THX Division. Eclby also offered its view of the future via an impressive demc of its six-channel SR-D movie-soundtrack format.

Min Disc gained momentum with RCA's surprise introduction of a \$599 portable player and Kenwood's promise of a home recorder later this year. Blaupunkt says it will have a car MD unit in 1994.

High-erd audio received more attention than usual through a Live High-End Exhibition featuring continuing demonstrations of systems in the \$3,000, \$6,000, and "sky's-the-limit" price ranges. On the ever-so-crowded speaker front, stardouts incluced Eose's

On the ever-so-crowded speaker front, stardouts incluced Eose's Mcdel 151 outdoor speaker (\$299 a pair), which carries a ive-year warrarty, DCM's \$350 Sub-710 powered subwoofer, the towering \$55,000 Genesis I system from Genesis, and Tema's \$770 Stereolith Duetto 100, which delivers stereo from a single enclosure.

Among the curiosities were Casio's \$90 wristwatch TV/VCR remote control and Parasound's \$4,650 belt-drive CD transport. For a look at products that thrilled us, turn the page. —Bob Ancosko Hot new products from the 1993 Summer Consumer Electronics Show





PS Audio's Reference Link LS (\$4,795) is a cutting-edge digital processor that combines 18-bit analog-to-digital and 20-bit digital-to-analog converters and a digital preamp in one remotecontrollable component (remote supplied). It boasts four digital inputs (two coaxial, two optical), five analog inputs, digital and analog tape loops, and balanced and single-ended analog outputs.

The four-piece Music One satellite/subwoofer system (\$869) is just one of the packages in JBL's new SoundEffects line of modular components, which can be mixed and matched to create a variety of configurations for music or home theater systems. Options include kits for wireless transmission of high-quality stereo signals across a room or throughout a house.

> Panasonic's entry into the bustling multimedia arena is the FZ-1 3DO Interactive Multiplayer (\$700), slated to hit stores in October. In addition to music CD's and Photo CD's, the machine will be able to play a host of special CD-based interactive programs, including games with bigh-quality graphics.

> > GTAL VIDEO MIXER

Panasonic

VIDEON

The Videonics digital video mixer (\$1,199) represents a price breakthrough in video editing. In addition to A/V mixing for up to four sources, the console provides easy access to some 200 broadcast-quality special effects. _





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A companion to the Logos centerchannel hybrid electrostatic speaker announced earlier this year, Martin-Logan's 5-foot-tall Stylos (\$2,750 a pair) can be mounted on the wall with supplied brackets (left in photo), on optional stands (\$300 a pair), or in the wall (not shown, \$300 for kit). Frequency response is given as 50 Hz to 20 kHz \pm 3 dB.

Definitive Technology's Powerfield 1500 subwoofer (\$995) combines a 15-inch driver, a 250-watt amplifier, and a two-way crossover with adjustable filters in an 18 x 20 x 18-inch cabinet finished in black lacquer or oak. It accepts either speaker-level or line-level inputs and boasts a low-frequency limit of 15 Hz.





Denon's DCR-930R (\$600) is the first car cassette receiver in the U.S. capable of receiving the Radio Data System (RDS) broadcasts now offered by more than sixty stations. It can display the tuned station's music format and call letters, intersperse traffic reports automatically, and provide other services.

Sutherland's meticulously crafted C-1000 preamplifier (\$15,000) has a separate power supply and uses a remote-controlled microcomputer data link for selecting inputs and adjusting volume and other settings. To prevent audio interference, the data link is active only when commands are being executed via the system's novel two-button remote. The preamp's chassis is



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Carver's CT-29v (\$1,000) is a fullbore, six-channel A/V tuner/ preamp featuring a DSP-enhanced Dolby Pro Logic decoder, two other ambience modes, seven audio and three video inputs, a subwoofer crossover, a memory mode to restore previous settings, and a Vocal Zoom control to enhance dialogue. Philips plans to offer a fullmotion-video (FMV) cartridge this fall that plugs into its CD-Interactive players. Based on the MPEG-1 digital video standard, the \$250 cartridge will enable today's players, such as the CDI-220 shown, to handle the next generation of CD-I's and CD movies.



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The NoiseBuster from Noise Cancellation Technologies (\$149) is the first implementation of an electronic noise-cancelling headphone system for Walkmantype portables. Tiny microphones in the headset and a batterypowered processor generate "anti-noise waves" said to reduce external noise 10 dB in the 50-Hz to 1-kHz range.

> Due in stores this November, the radio-based Multiroom Access Remote Control from Vaux Electronics (\$249) is said to operate most infrared-compatible A/V components from up to 125 feet away. A version compatible with X-10 control modules (\$299) is also p anned; both models include an RF receiving unit and infrared emitter.

Micro home theater: The Acoustimass-4 system from Bose (\$549) includes three 3 x 3 x 5inch speaker "cubes" with magnetically shielded 2½-inch wide-range drivers and an 8 x 14 x 8-inch bass module with a low-frequency limit of 40 Hz. Power handling is given as 50 watts continuous.

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STEREO REVIEW'S CRITICS CHOOSE THE OUTSTANDING CURRENT RELEASES

Midnight Oil Talks to the Trees



idnight Oil is one of the most relentlessly political bands in the history of rock. In the nearly twenty years they've been together, these guys have almost never done anything that didn't address a wrong or seek a meaningful change. Compared to this legacy of earnestness and commitment, "Earth and Sun and Moon," their newest album, seems like a radical change, even though the Oils have only lightened up a bit. The group is still hammering away at environmental and cultural rot, but here they're grabbing our lapels with a little less fervor.

Even lead singer Peter Garrett eases up on this album. In addition to his trademark vocal shifts—from a stage whisper to a guttural croon—he tries a little tenderness. Garrett delivers the title tune, a nearly drippy appreciation of nature, with none of the monomaniacal intensity that's made him such an urgent messenger. *Earth and Sun and Moon* is a love song to the environment, and Garrett sings it like a moon-eyed kid.

FILA/COLUMBIA REC

NHO

OTOH

In sharp contrast to the sound of the

last two Midnight Oil albums—the amazing "Diesel and Dust" and "Blue Sky Mining"—this new one is built on a guitar-rock foundation. Keyboards are just as important, and sometimes more important, to the softer, less pumped-up arrangements. The music is less strident, even warm. Blending acoustic instruments and Sixties-style guitar effects gives it the burnished glow of classic rock.

The songs on "Earth and Sun and Moon" are somewhat more elliptical than what we've come to expect from the Oils. While there are some of the customary references to Australian geography, history, and personalities, the album has an apocalyptic undercurrent, songs that stitch together fragmented allusions to the general decline of life on the planet, as if to say the millennium approaches and we better get our lives straight.

Midnight Oil seems to have decided that there's a time to howl and a time to soothe. Without letting go of their fierce moral vision, they've broadened their emotional and musical range. On "Earth and Sun and Moon," they show us what's wrong with the world, but they show us a better way, too. *Ron Givens*

MIDNIGHT OIL

Earth and Sun and Moon Feeding Frenzy: My Country; Renaissance Man: Earth and Sun and Moon: Truganini; Bushfire: Drums of Heaven: Outbreak of Love: In the Valley: Tell Me the Truth; Now or Never Land COLUMBIA 53793 (54 min)

Festive Haydn Symphonies from Montreal

en or twelve years ago a reviewer took Herbert von Karajan to task for using "the full strings of the Berlin Philharmonic" in his record-ing of Haydn's six "Paris" Sym-phonies (Nos. 82-87). Karajan didn't, actually, but he'd have been on solid historical ground if he had; the French orchestra for which Havdn composed those symphonies in the 1780's boasted a string section larger than today's norm, with forty-four violins and a dozen double basses. In any event, Charles Dutoit has definitely reduced his splendid Montreal Symphony Orchestra for his new recording of the "Paris" Symphonies on London-reduced it to the point of giving the smaller ensemble its own name, Sinfonietta de Montréal. From the robust sound of it, it is not nearly as compact as Haydn's own modest forces at Eszterháza, but it does gain in clarity over a larger ensemble, and it seems just right for the predominantly genial character of this music. More to the point, Dutoit's interpretive approach also seems just right.

The "Paris" Symphonies have not wanted for attractive recordings since the ones by Leonard Bernstein, Ernest Ausermet, and Leslie Jones in the Sixties. But Dutoit's strongest competition comes from Sigiswald Kuijken and the



period-instrument Orchestra of the Age of Enlightenment on two Virgin CD's. Kuijken observes repeats that are usually ignored and takes some surprisingly broad tempos, but his readings are charged with a vitality that is regally festive, as surely befits a collection whose most celebrated work (No. 85, in B-flat, "La Reine") carries the imprimatur of the queen of France. Dutoit's performances are no less festive, and certainly no less elegant, but they are a bit sunnier, more overtly affectionate, without belaboring the points that gave Nos. 82 and 83 the sobriquets "The Bear" and "The Hen," respectively. He is similarly aware that the astonishing originality and brilliance of No. 86, in D Major, need no interpretive underscoring to register their full impact. The bright-eyed. lustrous playing and warm, well-focused sonics make this set almost as self-recommending as the symphonies themselves. Richard Freed

HAYDN: Symphonles Nos. 82-87 ("Paris") Sinfonietta de Montréal. Dutoit LONDON 436 739 (two CD's, 144 min)



Conductor Chorles Dutoit



Conductor James Levine

The Met Orchestra's Spirited Wagner

ithout question James Levine's greatest achievement during his twenty-year association with New York's Metropolitan Opera has been the transformation of its orchestra from workmanlike accompanists to a cohesive body of musicians that can hold its own with the best Vienna, Berlin, or London has to offer. In recent years it has even been concertizing on its own under Levine's baton as the Met Orchestra.

The first CD recorded under that name contains tremendously spirited renditions of several favorite Wagner overtures and preludes. It begins with a *Rienzi* Overture that recalls for me the glorious 1927 Stokowski-Philadelphia Orchestra recording on Victor Red Seal with which I grew up: The sumptuous strings in the melody of Rienzi's Prayer come very close to matching the Stokowski standard. The *Tannhäuser* Overture is done in its Paris version with the Bacchanale, which Levine and his virtuoso musicians whip up to a fine frenzy. I do wish, however, that the ending had used the optional offstage women's chorus. The *Meistersinger* Prelude is splendidly broad but without a trace of stodginess. Levine captures the music's ebb and flow to perfection, and the brasses strut their stuff in fine style. The familiar curtain raiser for Act III of *Lohengrin* has both exuberance and tenderness in the right proportion (nice solo oboe!). The drama of *The Flying Dutchman* comes through with gusto and passion in this performance of its overture.

New York's Manhattan Center may have some difficulties as a recording locale, but Deutsche Grammophon has had plenty of experience there (including the Met's *Ring* cycle among other projects). The sound on this CD has warmth, a lovely spatial surround, and a wealth of textural detail that seems wholly natural and unhyped. Levine, his orchestra, and the production crew have done themselves proud all the way. *David Hall*

WAGNER: Overtures & Preludes

Met Orchestra, Levine DEUTSCHE GRAMMOPHON 435 874 (61 min)



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BEST MONTH



Laura Nyro, Back on the Street

t's been a long time between albums for Laura Nyro—nine years, in fact, not counting a 1989 live set—but you'd never know it from the sound of "Walk the Dog & Lite the Lite (Run the Dog Darling Lite Delite)," her return to the studio wars. The album is positively brimming over with the sort of jazzy. New York City street-soul that, along with standard singer/songwriter confessional gambits, has been her artistic signature since she made her debut in the late Sixties.

Time changes things, of course, and so what's particularly interesting about "Walk the Dog" is that it makes clear just how large Nyro's influence has loomed in her absence. A whole generation of smart, eclectic (and, truth be told, self-absorbed) female songwriter/performers seems to have sprung up in the last decade or so—and their debt to Nyro is suddenly obvious. Rickie Lee Jones, of course, comes to mind immediately, but it's hard to listen to Nyro's throaty vibrato on "Walk the Dog" without realizing that somebody as unlikely as Chrissie Hynde has also been doing her act since day one.

Nyro's new songs here aren't as consistently tuneful as her best, but there's a reassuring authority to the material that more than compensates, and there are a couple of oldies that she sings the very pants off of. The opener, Oh Yeah Maybe Baby (an obscure Phil Spector tune), is spectacular—to hear it is to swoon—and the concluding medley of Curtis Mayfield's I'm So Proud and the venerable Dedicated to the One I Love is very nearly as good. The rest of the album comprises R&B-inflected paeans to motherhood, sculptor Louise Nevelson, world peace, and animal rights (hey, Nyro's an authentic hippie—she's entitled) that are charming despite the PC overtones, and there's also the absolutely hilarious *The Descent of Luna Rosé*, which has the nerve to dedicate itself to the artist's menstrual cycle and contains the priceless line, "Baby, don't look at me like Freud." Add all that up, not forgetting the wonderfully live, pop-jazz instrumental backings by New York session legends, including drummer Bernard Purdie, and you've got one of the most welcome returns of a very busy season. Steve Simels

LAURA NYRO

Walk the Dog & Lite the Lite (Run the Dog Darling Lite Delite)

Oh Yeah Maybe Baby (The Heebie Jeebies): A Woman of the World; The Descent of Luna Rosé; Art of Love; Lite a Flame (The Animal Rights Song): Louise's Church; Broken Rainbow; Song of the Road (Walk the Dog & Lite the Lite): To a Child; Medley: I'm So Proud/Dedicated to the One I Love COLUMBIA 52411 (41 min)

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singer of all time. Other well-known performers on the CD include Big Bill Broonzy, Blind Willie McTell, and Leadbelly, and you will find in this eighteen-song collection the work of such other artists as Arizona Dranes, Lonnie Johnson, and Memphis Minnie.

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POPULAR MUSIC

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

ASHLEY CLEVELAND **Bus Named Desire** RCA 66215 (42 min) Performance: Big talent in hiding

Recording: Terrible mix

shley Cleveland's scored some heavyweight credits, having worked with Emmylou Harris and Etta James, played guitar in John Hiatt's touring band, and appeared on a Memphis Horns album with Stevie Winwood, Joe Cocker, and Robert Cray. On her second solo effort, the Tennessee native plows familiar lyrical ground (lost love, disappointment, divine inspiration, etc.), but goes about it in a way that crosses musical genres. The trouble is, she's all over the place stylistically-usually within one song-without any real rootedness or emotional resonance to keep the listener hooked. One moment she's Suzanne Vega (Henry Doesn't Care), and the next Melissa Etheridge (I'm Not Made That Way). Furthermore, she spoils her often intelligent lyrics with a jumbled mix of turbulent instrumentals (rampant, fuzz-toned guitar) and dreamy vocals that makes her seem uninterested in singing for anyone but herself. There's a big talent in there someplace, but it'll take awhile to clear away the rubbish and set it free. A.N.





What gives Dramarama the edge?

MARC COHN

The Rainy Season ATLANTIC 82491 (45 min) Performance: Assured Recording: Very good

tlantic Records seems to be hoarding Adult-oriented sirger/songwriters—Phil Collins, David Crosby, Marc Cohn-like a squirrel stock piling acorns in anticipation of a post-alternative-music winter. Unlike Collins. who refined the big, heartbroken, Top-40 ballad, first to a science and then to a shtick, Cohn puts "The Rainy Season" over on the sheer variety of its creatively enriched settings. These range from the Memphis-style shuffle of Walk Through the World to the closemiked gospel feel of Baby King, with side trips into the exotic backwoods-voodoo of Mama's in the Moon (featuring marimba and udu) and Medicine Man. That's not to say Cohn doesn't indulge in a little sluggish navel-grazing from time to time, but he largely avoids it on "The Rainy Season" by tilting more toward the Van Morrison than the Phil Collins end of the scale. Here's hoping he stays the course. PP

THE DEVLINS

Drift CAPITOL 80622 (53 min) **Performance: Fresh Recording:** Good aybe there's a secret connection be-

tween being a poet and being a rockand-roller, because Ireland produces more than its fair share of both. The Devlins, yet

another remarkable group to spring out of Dublin, are a lovestruck folk-rock act with powerful pop instincts. Colin Devlin, the quartet's singer-songwriter, has a soft, breathy vocal style, which occasionally works its way into a modest frenzy. He also has a spare but rather tart way with an electric guitar, which keeps his quietude from seeming wimpy. And the rhythm section, bassist Peter Devlin and drummer Sean Devitt, gives these tunes a crackling energy reminiscent of Mick Fleetwood and John McVie. Colin Devlin's words sometimes betray a callow way of looking at the world, but the modesty of his expression and the driving nature of his music are enough to make you forgive his youthful indiscretions and even, at times, to celebrate them just a little RG

DRAMARAMA Hi-Fi Sci-Fi

CHAMELEON/ELEKTRA 61489 (59 min) Performance: Seventies redux **Recarding: Packs a wallop**

i-Fi Sci-Fi" is the album that Aerosmith should have made this year. It's loaded with power, might, and wit, and it's one of the smartest and most satisfying hard-rock discs to come down the pike since those musical conveyances were commonly referred to as LP's. What gives Dramarama the edge over their competition is the combustible chemistry of vocalist John Easdale and guitarist Mark Englert. Easdale's got a snarl to his voice, but he isn't above self-scrutiny and even a shaken S

vulnerability (witness the bottomed-out, confessional Late Night Phone Call). Englert, meanwhile, fells tall timber with his ax in the loud, proud, sloppy/precise mode of such forebears as Mick Ronson and Johnny Thunders, may they rest in peace.

Though the ranks of the guitar glitterati are thinning, don't look for any obituaries in the Dramarama camp, for while they love the glorious, fuzz-covered sound and fury of Seventies live-fast-die-young hard rock, they've distanced themselves from the physical consequences of the lifestyle associated with it. The Dramarama of "Hi-Fi Sci-Fi" has that attitude in common with Aerosmith, and the album draws the line between the excesses of the past and the cleaned-up convictions of the present-explicitly in Don't Feel Like Doing Drugs and Prayer, implicitly elsewhere. They do so, however, without sacrificing the wild streak that galvanizes their music and without preaching with tiresome piety, and bravo to them for that. Meantime, they kick out the jams with pile-driving fervor on Hey Betty and Right On Baby Baby, ponder the existential void in Shadowless Heart, and send a giggle and a prayer toward heaven with the upbeat, melodic Incredible. Don't miss this record; it's lively, wide open, and a serious ton of fun. PP

DURAN DURAN CAPITOL 98876 (62 min) Performance: Schizo **Recording:** Sterile

ill the real Duran Duran please stand up? Purveying rather likable synth-pop tunes one minute, but more often delving into chilly, off-putting dance tracks, it's hard to get a bead on this band of former fashion victims who tenaciously stuck by their musical guns to survive the early-Eighties hype. But the commercial success of the new album is a hollow victory. The dance stuff, with which "Duran Duran" is overloaded, is disposable if not aggravating, and the cover of the Velvet Underground's Femme Fatale is obvious and way too late. Still, this has always been a singlesoriented band, and Ordinary World is one of those infernal readymade tunes with a chorus that hits like a Las Vegas jackpot. It doesn't stand completely alone-Come Undone mesmerizes in a moody swirl, and Too Much Information takes a tantalizing poke at MTV. But by and large this album is merely a fillerclogged wasteland. PP

BOB GELDOF The Happy Club POLYDOR 519 132 (68 min) Performance: Loose **Recording:** Good

aving gotten beyond the "Saint Bob" canonizations that dogged him in the wake of Live Aid. Bob Geldof is loose and limber on "The Happy Club." He allows himself to ruminate at length on the state of the world, especially political dogmas and the wheel of history, without losing the keen wit and unpretentious musical camaraderie that keep it all in a listener-friendly, humanistic framework. If you are particularly attuned to irony, the opening track, Room 19, is a motherlode, rendering a black-humored lyric-about a lab room in Moscow where the brains of



Lenin, Stalin, and others are interred-as a shambling Celtic singalong, with an organ part lifted straight from the Monkees' I'm a Believer. (Might that itself not cleverly allude to Robert Wyatt, a socialist, singer, and songwriter who covered that very Monkees tune in a lighter moment? The mind boggles.)

So it goes on "The Happy Club," a rich blending of music and musing that trades ideological stridency and reflexive sarcasm for openhearted accessibility and occasionally serious inquiry. Every song on this album has got something to recommend it, but some of the highlights are a stream-of-consciousness reminiscence about growing up Irish entitled The House at the Top of the World; the exultant. Memphis-by-way-of-Dublin kick of Yeah. Definitely; the title track's improbable optimism ("I feel great, I feel fine today / I joined the Happy Club"), and the soulful, evanescent reveries of The Soft Soil. With confederates like World Party's Karl Wallinger lending a hand, it's hard not to get caught up in Geldof's spirited goings-on. P.P.

JANIS IAN **Breaking Silence** MORGAN CREEK 20023 (49 min) Performance: New age folk-jazz Recording: Very good

o Janis lan is a lesbian. That's what she's **S** saying in the papers these days and what she cryptically whispers in Breaking Silence. the title track of her first album in cons. Are we supposed to be shocked? Not after Uncle Wonderful, her mid-Eighties song about childhood incest. The real surprise is that after three decades of superior songwriting, lan has made an album almost entirely devoid of substantial material, despite such full-of-potential topics as spouse abuse and Holocaust survivors. Only the remarkable Some People's Lives, already recorded by Bette Midler, pulls any weight. lan's voice is disappointing here as well. Always something of a whisperer in the contessional mode, she sometimes rose to midrange strength, as in her early hits, Societv's Child and At Seventeen. But lan delivers this program-a sort of new-age sketch made up of folk, jazz, and blues-in a thin, wispy voice that suggests pillow talk. Maybe that's the point. But if someone's going to share that kind of intimacy, they'd better have something a little stronger to warrant paying attention for a whole album. A.N.

FROM THE VAULTS TALES



THE CARS DCC 1032 (38 min) I've been generally agnostic about DCC's remastered, gold-plated CD reissues of classic rock albums. Sure, they sound great, but to my ears whatever sonic differences that may be detectable aren't necessarily better, just different, and usually only marginally so. This version of the Cars' debut, however, really does sound like a different album from the standard Elektra version; in fact, so much sonic gunk has been scrubbed away here that chronic over-producer Roy Thomas Baker's work sounds downright understated. Whether that's a good thing remains problematicthe synthesizers seem really cheesy all of a sudden-but the result is undeniably inter-S.S esting.

ALEX CHILTON **Bach's Bottom**

RAZOR & TIE 2010 (48 min)

Chilton, then fresh out of Big Star and not yet the post-punk idol he was to become. recorded this unholy mess of an album in 1975, with producer Jon Tiven handling all the guitar parts (Chilton had apparently hurt his hand in an accident involving controlled substances). Tiven has cleaned it up for this CD version as best he could, to the point where some of the tracks-a spirited version of the Stones' Singer Not the Song-now almost sound like music, and if you like Chilton at his most ludicrously dissolute, you'll be glad to have it. SS

THE DAVE EDMUNDS ANTHOLOGY (1968-90)

RHINO 71191 (two CD's, 129 min)

Dave Edmunds's first two solo albums remain among the most annoying MIA's in the current CD catalog, but until some enterprising soul restores them in their entirety, this greatest-hits collection by the singer/guitarist Phil Spector once called the best producer in the world will serve quite nicely. Just about everything you'd want is here, from Edmunds's amusing psychedelic-Sixties stuff with Love Sculpture (a Les Paul-on-acid version of Sabre Dance) to his more recent work with the Stray Cats and Jeff Lynne. Rhino's remastering is, as usual, impeccable. S.S.



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OPULAR MUSIC



JANET JACKSON ianet. VIRGIN 87825 (75 min) Performance: Hot Recording: Good

he Sensuous Woman, that groundbreak-Ting 1970 book about how women should revel in their own feelings of sexuality, was written by someone who identified herself only as "J." One listen to "janet.," the new album of heavy breathing by Janet Jackson, and you'll see that these two women have more in common than a curvy letter. The third album on which Jackson has collaborated with superstar producers Jimmy Jam and Terry Lewis, "janet." has an erotic architecture. It traces the history of an affair from steamy passion to betrayal to steamy passion to liberation to steamy passion. In between songs, there are little transitional bits, mostly Jackson's soft murmurings. When she says, "Be a good boy-and put this on," the mind races at the thought of what "this" is. On Any Time, Any Place, she moans about having sex, as the title says, any time, any place: "skirt around my waist / wall against my face." Did I mention that there's a little steamy passion on this album?

It has the same beat-heavy propulsiveness as "Rhythm Nation" and "Control," although the beats themselves aren't quite as heavy this time around. It's as if Jam. Lewis. and Jackson decided that a softening or muffling of the rhythms would be more sensuous. The bass on You Want This, for example, is ultra-thick-or perhaps, considering the subject matter, it would be more appropriate to call it "engorged." The album gets off strongly with four songs that blend love chatter and body-shaking rhythms, beginning with the delicate That's the Way Love Is and ending with the pounding This Time, featuring wordless operatic flourishes by Kathleen Battle. None of the rest of the sequencing works as well as this first cluster, and the album actually bogs down with consciousness-raising in the middle. But there are many pure pop pleasures to be found elsewhere-and good, clean, pure ones at that. As a concept album, "janet." doesn't entirely work, but then thinking isn't as important here as doing. RG

ROBERT EARL KEEN

A Bigger Piece of Sky SUGAR HILL 1037 (41 min) Performance: Keen Texas writing Recording: Very good

obert Earl Keen, who's dropped the "Jr." R from the end of his name. established himself with his first album as a bright and

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clever advocate of the Texas school of literate folk/country songwriting. With this fourth album, he's moved closer to the league of Lyle Lovett and Joe Ely, both of whom have recorded his songs.

Keen can spin out better-than-average songs about restless drifters (Crazy Cowboy Dream. Corpus Christi Bay), but he's best at concocting slightly mystic story-songs about psychotics who passed for heroes in the Old West (Whenever Kindness Fails, Jesse with the Long Hair). While not every song is clear and upfront about what's really going on (such as the wonderfully murky Here in Arkansas), Keen, backed by vocalist Maura O'Connell, mandolinist Jonathan Yudkin, and Marty Stuart on violin, is always compelling, using language the way one of his characters might use his fists-to prove his point. And, also, to knock you out. A.N.



AIMEE MANN "Whatever" IMAGO 21017 (52 min) Performance: Resentful Recording: Good

imee Mann has a chip on her shoulder. That means the stories she tells and the emotions she casts have real oomph behind them. It also means that she can't help but wallow in the hurt and resentment and anger she feels. "Whatever," her first solo album since the dissolution of her band 'Til Tuesday, wouldn't say much if she weren't so upset, but after a while you just want her to lighten up a little. True, Mann has a knack for revelatory phrasemaking. On Say Anything, she sings, "You see me like a judge / though I deny it / and hold me like a grudge, then justify it." With nearly every song, bile is flung at the one who got away, either in a fine stinging mist or in great hurtful buckets. Unsurprisingly, all this gets a little monotonous after a while, although the melodies have a low-burning charm, the arrangements hint of classic-rock nostalgia. and Mann has the kind of voice that can make you want to drink to her blues. Considering the trouble she's seen, you could end up with a considerable bar tab R.G.

KATY MOFFATT

The Greatest Show on Earth PH1LO 1148 (46 min) Performance: Improved **Recording: Good**

ast time out, Katy Moffatt teamed with her brother, Hugh, who did her no favors. This time she's made a wiser choice of collaborator in Tom Russell, who not only lends her his crack band and sings duet and harmony vo-
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cals, but wrote or co-wrote ten of the twelve songs.

Moffatt reaches higher than her grasp in some of the tunes, such as the title cut, which is supposed to be about the daily sideshow between men and women, but more often than not she comes through with sensible if lightweight efforts that offer advice about how to live a worthwhile life (A Little Love Is a Dangerous Thing, Better Let Her Run). Anyone familiar with Russell's work, however, will recognize that the meatier songs have more of Tom in them than Katy-the evocative portrait of the sad, would-be actress holed up in The Evangeline Hotel, the dreamy boxer of Billy Collins, and the fond memories of time passed and lessons learned in Amelia's Railroad Flat. Moffatt's voice, something between pretty, folk-style balladry and ethereality, is pleasant enough, but it could use more emotional shading in the slighter songs. Still, this record will surprise you in how easily it burrows under the skin. A.N.

VAN MORRISON Too Long In Exile POLYDOR 519 219 (78 min) Performance: Effortless Recording: Very good

a can't begin to say where Van Morrison has been in exile, or whether the absence was geographical, political, social, romantic, psychological, musical, or (your guess goes here). All I know is I'm glad he's back. "Too Long in Exile" is a natural wonder, full of easy pleasures. Morrison has always been impetuous, casting his musical fates to the wind. He's poured his Celtic heart into African-American styles—R&B, blues, jazz—with full-bore abandon. On this album he does the same, only with less desperation and brooding than usual. You can actually hear Van Morrison having fun here, more fun than on any record since "His Band and the Street Choir."

Take Gloria, for example. This remake of the 1965 Them hit is pretty casual, especially in the call-and-response ad-libs between Morrison and his duet partner. John Lee Hooker. And Morrison's singing on Moody's Mood for Love-as he blisters ahead of the melody like a jazz soloist more in love with music than with love-is ecstatic. And even though he tries to settle a couple of scores on the album, and takes a few side trips into the mystic, he seems less obsessed with the higher meaning of his music than content with the sheer pleasure of making it. In the past, Morrison has sometimes seemed like a stranger in his own strange land. But not on "Too Long in Exile." He sounds comfortable in his own skin. We should enjoy R.G.it while we can.

> ELLIOTT MURPHY Unreal City RAZOR & TIE 2811 (53 min) Performance: Honest

Recording: No frills

ike fellow cult figure Jonathan Richman. Elliott Murphy couldn't care less about the modern-day music biz and where he fits in. But unlike Richman, who strives for a childlike innocence. Murphy is a wordy, worldly, hyper-literate sort. He has the anti-establishment instincts of a punk rocker, but knows too much to affect that stance. So rather than hide



Almee Mann: buckets of bile

his influences he revels in them and indeed strives, with the pride of a writer bound to language, to rise to lofty heights. Having left this country for a romantic life of Hemingwaystyle exile in Paris (where, unlike in America, he's listened to and appreciated). Murphy has been issuing worthwhile albums on small labels since the late Seventies.

Unreal City" functions as both travelogue and diary. Recorded on the run in unpretentious, low-fi settings. Murphy zeroes in on a highly personal, semi-acoustic style that is more emotionally revealing and artistically valid than big budgets or high-tech could ever hope to approach. "Unreal City" is as confessional and free of gimmickry and guile as a letter from a friend. There are reflections on the past (On Elvis Presley's Birthday, a sharply focused set of New York memories culminating in his infatuation with F. Scott Fitzgerald: "the coolest of the cool") and the present (On the Wings of Icarus, in which he beseeches, "Purify my passions / A new life has begun"). There are also songs of emotional turmoil (Something Like Steve McQueen). crushing loneliness (Sicily [Tropic of Separation]). a profane and furious screed directed at the decadent rich (The Epicenter), and, finally, an uncertain but committed note of hope and resolution (Let It Rain). Through it all, Murphy blows his harmonica and strums his guitar in the honest, ungussied folk-rock vein in which he's always excelled and now defines. PP

RAGING SLAB

Dynamite Monster Boogie Concert DEF AMERICAN 45244 (47 min) Performance: Rousing Recording: Okay

Raging Slab isn't playing live on "Dynamite Monster Boogie Concert." their second album, but don't arrest these folks for false advertising. After all, the other three words in the title are accurate if somewhat arrogant, and three out of four ain't bad. Who cares if you can hear distinct echoes of bands such as Mountain, the Allman Brothers, and ZZ Top?

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Billy Ray Cyrus: Not Exactly Rocket Science



isst, the basics. Yes, Billy Ray Cyrus's debut record, "Some Gave All," which sold an incredible seven million copies, is one of the flattest albums since "Fabian's Greatest Hits"-only the infectious, if obnoxious, Achy, Breaky Heart and the brooding Could've Been Me are anything but total dreck. Yes, in concert Cyrus not only dresses like a low-rent gigolo, but moves like a Chippendale dancer, for which he was once understandably mistaken. And let's not even talk about his interview presence, which suggests he has an I.Q. no greater than a grapefruit's ard somehow compels him to gobotically repeat the humble sentence, '1'm just a guy from Flatwoods, Kentucky' ta place, by the way, that most Kentuckians never heard of before Billy Ray). So Cyrus is largely an embarrassment, more cannon lodder for those who want to shoot a huge note through the "country doesn't mean gnorant" banner that Nashville likes to trot around these days.

Now comes Cyrus's follow-up album, "It Won't Be the Last," the one Mercury says will end all the Billy Ray-bashing. Well, yes. And me. The songs are infinitely superior to those on "Some Gave All," with three by Don Jon Tress, the writer of Achy Breaky Heart Yet there's no obvious classic here, though Alex Harvey and Mike Curtis's Sometody New gets a bead on an epicballad sound, and Ven Tress's pounding rocker Talk Some captures the excitement, danger, and illicit thrill of lust with a mysterious stranger. That means that the songs are pleasant, if hardly "A" material, and, as on Cyrus's debut, his self-written material sticks out like a line dancer at a country-club ball—amateurish In both its limited melodies and sImplistic lyrics.

But the most overwhelming thing that strikes you about Cyrus's new album is that the boy just can't sing. He does his best ir putting some muscle behind a gruff, colorless baritone, but in places, especially his own It Won't Be the Last, he stabs for a note but settles for the sound of his voice simply sliding down the scale, having missed its mark by, oh, a foot or two. What Cyrus does have is heart, and that's what rescues him. Time and again, his gooc intentions and true grit in romance make him out to be the big, dumb boy in love, ready to sacrifice everything to prove his ardor. It helps make one of the album's better songs-Reed Nielsen and Monty Powell's Words by Heart, about a letter found in an old high-school jackettranscend stereotypical, teenage puppy love and become something memorable, if not exactly profound. And it makes the first single, In the Heart of a Woman, sound like a lesson learned the hard way.

What challenges Cyrus's personal integrity here (and you thought he didn't have any) is his insistence that he's never been influenced by Elvis Presley, and that he doesn't invite the comparisons some misguided writers lay on him. Oh, yeah? Is that why he brings the Jordanaires aboard for When I'm Gone, a romance tune that borrows everything from Old Shep but the tears? Is that also why he puts the Elvis sneer to Throwin' Stones and Dreamin' in Color, an updated In the Ghetto?

Cyrus is a natural phenomenon. He's a Marky Mark for housewives, a Harlequinromance hero for the K-mart set, and Horatio Alger in a tank top, all rolled into one. But that doesn't mean we have to take him seriously as a musician, no matter how catchy his songs may occasionally be, or however wonderful it is that his big-hearted jock prayers were answered, all the way from heaven to little ol' Flatwoods, Kentucky-wherever that may be. Alanna Nash

BILLY RAY CYRUS It Won't Be the Last

In the Heart of a Woman: Talk Some; Somebody New; Only Time Will Tell; Ain't Your Dog No More; Words by Heart; It Won't Be the Last; Throwin' Stones; Right Face Wrong Time; Dreamin' in Color, Livin' in Black and White; When I'm Gone MERCURY 514 758 (39 min)



Raging Slab takes the stylistic trademarks of its heroes and sticks them in the blender along with the basic building blocks of hard rock. blues, and bluegrass. The hard-driving but loose-jointed combination may give you $d\dot{e}ja$ vu, making Raging Slab sound like a great lost band of the early Seventies. And lead singer/ songwriter Gregory Strzempka's lyrics have a free-floating, hippie-dippy mix of idealism and spirituality that can take you back as well. But this band plays with such relentless, sledgehammer force that this retro journey isn't a bad trip at all. *R.G.*

KENNY ROGERS If Only My Heart Had a Voice

GIANT 24490 (34 min) Performance: Faked sincerity Recording: Good

ow that Kenny Rogers's sordid little phone-sex scandal has hit the headlines, he's returned to his home base of country music, believing that his core fans will support him in his hour of need. Maybe they will, but it won't be because they're blown away by this album-strictly a by-the-numbers effort. blander even than his early-Eighties stuff. The accompanying press release steers clear of such topics, of course, stressing Rogers's four TV specials and his achievements as a published photographer and important humanitarian. How interested is Rogers in the needs of others? Dial 1-800-KENNYSEX, and, as Jim Reeves suggested long ago, put your sweet lips very close to the phone. A.N.

PETER ROWAN Awake Me In the New World SUGAR HILL 3807 (51 min) Performance: Pretty, but ... Recording: Very good

eter Rowan, with roots in bluegrass and rock, has in recent years experimented with concept albums that beautifully illuminate both the historical context of the project ("Dust Bowl Children") and the human condition that fueled it. This effort-which tells the tale of a simple man. Pulcinella, who traveled with Columbus to seek the New World, only to make his real discovery in his heart-doesn't have the staying power that marks Rowan's best work. Several songs, including Dance with No Shoes and Dreams of the Sea (both duets with Tish Hinojosa), are melodic gems that evoke the excitement and imagination of a sailor off on the adventure of his life. But after those, and the lush and dreamy title tune, the songs crumble into a formless mishmash of Rowan's enthralling tenor and the exotic sounds of flamenco guitar, Dakota cedar flute,

and shakaree. This is an ambitious but ultimately disappointing work. A.N.

> WALT MINK Bareback Rider CAROLINE 1737 (31 min) Performance: Precocious Recording: Good

Disciplined but jittery, virtuosic while having a short attention span, Walt Mink serves up ten combustible miniatures on "Bareback Rider," their second CD. The group is a study in extremes. John Kimbrough's meaty guitar lassos riffs and whips out chordal calculus in time signatures beyond the ken of most rockers. Over this angular assault, he sings in a slight, choirboy voice that practically vaporizes on contact. Drummer Joey Waronker implies momentum without ever going the slam-bang 4/4 route; he's too music-schooled for that. And bassist Candice Belanoff threads her way through this maze with a game face.

They're clever, all right, but maybe a little too clever to simply hold on to an idea and develop it to its logical conclusion. Nevertheless, if you're into short bursts of activity, "Bareback Rider" is, just as the title promises, an intensified sprint whose songs are over before you know it but leave you winded and reeling nonetheless. Closer inspection reveals they've left behind dinosaur tracks that betray no small influence from the likes of Jimmy Page (the lofty guitar architecture of Subway) and Jimi Hendrix (the whomping riffery, mighty octaves, and venturesome spirit stamped on everything, especially Turn and Disappear). There's even grounds for a Rush comparison when Kimbrough's tweedy voice is considered alongside the progressive cast of the music. Yes, in the continuing dialectic between old-guard and ultramodern. Walt Mink has engineered a new strain that exhibits plenty of hybrid vigor. PP

Walt Mink: a little too clever?

N.



Collection

THREADGILL'S SUPPER SESSION WATERMELON 1013 (66 min)

Performance: Pull up a seat and set awhile Recording: On the fly

fyou've read Myra Friedman's suburb biography of Janis Joplin, *Buried Alive*, you know about the late Kenneth Threadgill and



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POPULAR MUSIC



RUBÉN BLADES CON SON DEL Solar

Amor y Control

SONY/DISCOS INTERNATIONAL (55 min) Blades, the Panamanian actor/writer/singer, weighs in here with an impressive collection of affecting, humanistic, and blackhumored songs in Spanish, such as *El Apagon*, in which a bunch of beauty contestants get ticked when the power goes off in a political blackout. At least I think that's what happens, since the English translations provided here are more like synopses. Maybe Blades always meant America to be a secondary market—deep down, he's really an activist with a poet's heart. *A.N.*

ANDY BRECKMAN Don't Get Killed

GADFLY 121089 (36 min)

Breckman is a musical primitive, even for a folkie. But he's also an extremely funny guy (a former writer for David Letterman) who comes across as a kinder, gentler Loudon Wainwright III. This new live album features laugh riots galore, including *Here Comes My Career* and the immortal *Where is Rabbi Finkleman*?, and it deserves to be heard by more than just Breckman's hundreds of fans. [Available from Gadfly Records, 1-800-541-9904.] S.S.

VINCE NEIL

WARNER BROS. 45260 (53 min)

The former Mötley Crüe lead singer returns with a better band (thanks to ex-Billy Idol guitar hero Steve Stevens) but the same old mediocre headbanger anthems. Trust me nothing here will be revived on the soundtrack for *Wayne's World IV*. S.S.

OZZY OSBOURNE

Live & Loud

EPIC 48973 (two CDs, 118 min) Suggested subtitle: "& Highly Undignified for a Forty-Four-Year-Old Guy to Be Doing in Public." S.S.

PAVAROTTI & FRIENDS

LONDON 440 100 (59 min) This all-star concert will not please Sting's fans or Pavarotti's. Sting makes Pavarotti sound hard and square: Pavarotti makes Sting sound weak and flat. Other guests— Suzanne Vega. Bob Geldof—bravely do their thing. but it's not enough (I hope the Virgin Mary never hears what Aaron Neville does to Ave Maria). Friends like this don't need enemies. William Livingstone

THE REAL JAMAICA SKA

EPIC/LEGACY 52724 (31 min)

A Jamaican dance-music sampler from the early Sixties, featuring some of the first recordings by future *Harder They Come* star Jimmy Cliff. Most of it is pretty forgettable, but Cliff's *Trust No Man* is an inter-



esting portent of the explicitly moralistic and political reggae to come. S.S.

SUPERSNAZZ Superstupid!

SUBPOP 209b (29 min)

Shonen Knife? Feh! Next time I want to hear three-chord. Ramones-style punk racket by a cute Japanese all-girl band I'll put on Supersnazz. Not only have they got the wit to name themselves after a Flamin' Groovies album, not only is their drummer named Skinny Minnie, but they do a version of *Papa Oom Mow Mow* that the Trashmen would surely have appreciated. No higher praise is possible. *S.S.*



SURF & DRAG VOL. 2 SUNDAZED (1015 (43 min)

More rare, mid-Sixties surf music and car songs courtesy of the coolest little reissue label in the Western World. Pick hits: She Rides with Me, by Paul Petersen (of Donna Reed Show fame, produced by Beach Boy Brian Wilson), and the Quads Surfin Hearse, which fully lives up to its title. S.S.

DWIGHT TWILLEY BAND The Great Lost Twilley Album

SHELTER/DCC 8020 (72 min)

Back in the middle Seventies, these pop formalists were a critical White Hope much as Big Star had been earlier, the difference being that Twilley scored, deservedly, a hit single (Tm on Fire, heard here in an interesting alternate mix) and, in retrospect, lacked the sort of personal subtext that has kept Big Star from dating. Which is to say that this heretofore unreleased collection of Twilley's odds and ends is lots of fun, but, alas, also something of a period piece. *S.S.*

WEEN

Pure Guava

ELEKTRA 61428 (56 min)

Not getting enough irony? Try listening to a couple of minutes of Ween's alternative-rock novelty tunes and get the maximum daily allowance. Some of "Pure Guava" is cute, but it's irritating over the long haul. Prescription: Ween needs to get real. *R.G.*

his Austin bar that opened just after Prohibition as a filling-station and beer joint. Joplin wasn't the only Texas legend to get her start there, and certainly not the only thrilling performer. Lately, on Wednesday nights, the place throbs and hops with polished performers led by Champ Hood and the Threadgill Troubadours. This record, a live set by some of the bigger names who did their time at Threadgill's and can't resist doing more, such as Jimmie Dale Gilmore. Butch Hancock, and Marcia Ball, is a laid-back joy, an acoustic exercise in sweet and sad, the old sounds of Jimmie Rodgers, Hank Williams, and the Delmore Brothers, and the more modern laments of Hancock and Johnny Cash.

Gilmore and Hancock, as anyone who knows their work can attest, are more gifted troubadours than true singers, and they're right at home in this barbecue-and-beer atmosphere (Threadgill's is a full-fledged restaurant now). Yet some of the most memorable moments involve the marvelously laconic voice of Champ Hood, whose rendition of the traditional Tamp 'em Up Solid refreshes like cold lemonade on a hot August night. Instrumentally. this is set-'em-up-Texas style, with that swing guitar and a harmonica hot enough to melt candle wax. But the music also makes several sidetrips to Memphis (Stag-o-Lee), takes time to cruise the Mississippi (Darkness on the Delta), and drives on over to Nashville (Christine Albert's evocative version of Don Gibson and Patsy Cline's Sweet Dreams). Settle in and order a long-neck-on second thought, better make it two. You'll want to set through this set twice. A N



BENNY GOODMAN Swing Swing Swing

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POPULAR MUSIC



Lyte Mays: beyond fusion

lection is still being cataloged and prepared for what is now known as the Benny Goodman Archives.) Forming an important part of the bequest were some 400 master tapes—including many unreleased Goodman recordings and the right to license them. Now MusicMasters has released "Swing Swing Swing." a six-CD boxed set featuring eighty-four selections, and there is more to come. On the basis of this first release, it should be worth waiting for.

Since many of the tapes were not properly marked, a Herculean task faced cataloger Loren Schoenberg. The few dates that are given indicate that the tapes were made between 1955 and 1986; personnel information is equally vague, although performances clearly identify many of the soloists. This was not Goodman's Golden Age, of course, but it covers a period when his playing was as eloquent as ever, and the set benefits from the fact that Goodman surrounded himself with excellent sidemen. I won't dwell on specific performances here, but rest assured that any lover of swing and mainstream jazz will find a plethora of delights in this box, which comes with a thirty-six-page illustrated booklet containing a helpful index of artists and titles, informative notes on the music by Schoenberg, and wonderful remembrances by pianist/ composer Mel Powell, conductor Morton Gould, and pioneering record producer Helen Oakley Dance, who helped Goodman break down racial barriers in the band, although the late John Hammond got the credit. CA

LYLE MAYS Fictionary GEFFEN 24521 (66 min) Performance: Exquisite Recording: Excellent

ecause of his long association with guitar-ist Pat Metheny, pianist Lyle Mays is often tagged as a fusion artist, but there is more substance to his playing than that suggests. You can hear it in "Fictionary," Mays's third album as a leader. Produced by Metheny, this is an impressive set of trio performances that owes much to the superb rhythmic support of bassist Marc Johnson and drummer Jack De-Johnette. Two selections, Trio #1 and Trio #2. are freely improvised by the three players: another one, Falling Grace, was written by bassist Steve Swallow, and the rest are Mays's own. They include the aptly named Bill Evans, an introspective, delicate solo number called On the Other Hand, and the title tune, a clear. floor-stroking bow to Chick Corea. Let me assure you, however, that these tracks are but the icing on a savory cake-the entire set is splendid. C.A.

KERMIT RUFFINS

World on a String JUSTICE 1101 (41 min) Performance: Promising Recording: Very good

f New Orleans trumpeter Kermit Ruffins can shelve the Louis Armstrong imitations. he should do well carving his own path. A fine



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POPULAR MUSIC

player who tavors traditional jazz, he undoubtedly does well feeding reflections of Satchmo to Crescent City tourists and clubgoers. But I think you probably had to be there-in the club, that is-to appreciate some of the performances on his debut album, "World on a String." There is, of course, nothing wrong with seeking inspiration from Armstrong-most trumpeters and jazz singers do. But when the result is blatant imitation, I cringe every bit as much as I do when someone jerks a cigarette from his mouth and yells Peetah! à la Bette Davis. Ruffins's vocals have a rowdy club edge even when he isn't doing Armstrong, but listen to his playing on Georgia on My Mind and Rosetta and you'll hear why I think he has a future. The album also features good work by pianist Ellis Marsalis, excellent bass support by Walter Payton, and occasional input from Danny Barker, one of New Orleans's shining jewels. C.A.

GEORGE WALLINGTON

The George Wallington Trio SAVOY JAZZ 0136 (32 min) Performance: Proto-bop **Recording: Much improved** est known for contributing Godchild to Builes Davis's "Birth of the Cool" and active only sporadically since the late 1950's, the late George Wallington was one of the most technically adept and emotionally compelling of the young pianists spawned by Bud Powell in the late 1940's. All of the material on this

crisp-sounding reissue was recorded in 1949 or 1951, and all but two tracks feature Wallington with bassist Curley Russell and drummer Max Roach. In addition to revealing Wallington to be almost Powell's equal in speed and harmonic reach, these fevered and in-a-hurry trio performances (even the ballads rush against tempo) also provide a forceful reminder that early bop was a young man's music (whereas most 90's bop is tepid stuff played by young men pointlessly imitating old masters they assume never to have been their own age).

With a total playing time of just over half an hour, the disc is short by today's standards. Nevertheless. a budget price, exemplary digital remastering, and the crackle of the trio performances combine to make this CD a good investment. ED.

Collection

ESQUIRE POLL WINNERS The First Esquire Concert LASERLIGHT 723 (55 min) Performance: The very best **Recording: Excellent digital transfers** anuary 18, 1944 was definitely the night to be at the Metropolitan Opera House. It was the night Louis Armstrong, Art Tatum, Coleman Hawkins, and some equally famous colleagues-all winners in Esquire magazine's first annual jazz poll-made their Met debut.

Recordings of that evening were originally issued by the U.S. Government on V-Discs, for distribution to GI's overseas, but the concert was also broadcast live. A handful of small labels have made this astonishing event available to collectors over the years, but this CD release offers the best technical quality I have heard so far. I suspect an aircheck is the source for some of this, because we hear a pesky announcer who, at the start of the disc, feels compelled to identify the players, and sometimes even lowers the music level to repeat what we have just heard announced from the stage. Nevertheless, those intrusions (and some awkward liner notes) are minor annoyances on a release that abounds with spirited performances by the cream of any decade's jazz crop.

Mildred Bailey (Mrs. Red Norvo) does her inimitable version of Honeysuckle Rose and interacts with the audience to turn Squeeze Me into the kind of performance one could never get in a studio. Billie Holiday was still in top form back then, and we hear it on I'll Get By and Billie's Bounce, both of which are enhanced by Roy Eldridge. There are several superb instrumental performances featuring Barney Bigard, Red Norvo, Lionel Hampton, Jack Teagarden, and the entire cast. The only sour notes occur at the very end. If you think Roseanne Arnold murdered the Star Spangled Banner. you should hear what Armstrong, Eldridge, Teagarden, Tatum, Hampton, and Norvo do to it! C.A.



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BACKREAT BY STEVE SIMELS

Who Sold Out?

id you ever have the feeling you've been cheated?" John Lydon (a.k.a. Johnny Rotten) asked that question at the end of the Sex Pistols' final performance back in 1979, and I bring it up because I recently witnessed another musical/ cultural event-precisely the sort of thing, actually, that Rotten and his fellow punks were railing againstand it's left me with a similarly uncomfortable feeling. I'm referring, alas, to the Broadway production and resultant original cast album of a show called (inaccurately, in my view) The Who's Tommy.

Now I'll grant you I had severely low expectations from the minute I heard Pete Townshend was having one more go at his celebrated 1969 rock opera. Given the existence of the original album, the all-rock-star orchestral remake in 1972, and, of course, the ludicrous 1975 Ken Russell film and accompanying soundtrack (Oliver Reed sings!), there seemed to be no particularly pressing need to revisit this material yet again. Nevertheless, the recent Broadway version opened to such rapturous re-



The Who, circa 1970 STEREO REVIEW SEPTEMBER 1993

views ("This show cures cancer!"-Frank Rich, New York Times) that I was at least mildly curious; perhaps Townshend and director Des McAnuff had divined something in Tommy that really justified the new theatrical presentation.

Uh-huh, and perhaps someday trained sheep will pilot the Concorde. The saddening if not altogether surprising truth about what's currently on display at New York's St. James Theater (and what can now be heard on an RCA CD or cassette) is that The Who's Tommy is at best a spectacular but otherwise brain-dead Broadway musical in the not-so-great tradition of Anlooks just like Wayne's World's Mike Meyers (listening at home, at least, you don't find yourself expecting him to break into "See me, feel me Not!" as you do in the theater).

No, the real problems with The Who's Tommy are conceptual. Take the ending. In the original, you'll recall, Tommy's disciples turn on him when they realize he actually demands something of them; the point Townshend was making about religious/pop celebrity back in 1969 may have been a tad ambiguous (read: muddled), but it could hardly have been described as uplifting. Not so the 1993 version, in which the former deaf, dumb, and

So Pete Townshend's been to AA. Is that any reason to inflict The Who's Tommy on us?

drew Lloyd Webber. And at worst it's a total betraval of the original work. the cultural milieu in which it was created, and, coincidentally, everything the Who stood for.

Overstated? The purist rant of an aging baby boomer? Well, I never felt "Tommy" was the Who's best work to begin with, so it's not as if I have a vested interest in hating the revival. How then is the show so lousy? Let us count the ways. To begin with, there's still no script in the traditional sense. and since the all-sung plot remains as confusing as ever, the end result is rather like a comic book where they've neglected to fill in the dialogue balloons.

Worse, the music and staging are hopeless. Forget the supporting cast, filled with legit Broadway types who sound utterly at sea singing rock, if that's still the word. Forget the show's back-up band, which (even on the CD, with the help of Beatles producer George Martin) sounds like a wedding combo trying to play a little something for the younger folks. Forget the Tony Award-winning (huh?) choreography, which unconsciously (I hope) parodies little bits from Grease and various Bob Fosse productions. And even forget that Michael Cerveris, in the title role. blind kid renounces his followers and then returns to the dysfunctional family (including pederastic Uncle Ernie) that traumatized him into autism in the first place. Yes, folks, the new Tommy is now a John Bradshaw screed about healing the inner child or, as a friend of mine put it less forgivingly, about Pete Townshend going to AA. Welcome to the Nineties.

Most obnoxious is calling such mush The Who's Tommy, which to my mind verges on consumer fraud. After all, the real Who's "Tommy" quite clearly already exists, frozen in time, as the original album-the work of four impossible-to-copy musicians who at their peak rarely played a note without summoning a feeling of glorious anarchy, freedom, and boundless possibilities. To say that the Broadway version, a pale travesty on the level of Beatlemania or an average Elvis impersonator, suggests none of that is to belabor the point, and perhaps we should simply accept it for what it is: showbiz. But while I'm willing to concede that Townshend had every right to fiddle with the literal meaning of his magnum opus, it's hard to feel anything less than depressed that he's so obviously trashed its spirit. Hope I die 600 before I get old, indeed.

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CLASSICAL MUSIC

NEW RECORDINGS REVIEWED BY ROBERT ACKART, RICHARD FREED, DAVID HALL, GEORGE JELLINEK, ERK SALZMAN, AND DAVID PATRICK STEARNS



The violinist Anne-Sophie Mutter

BERG: Violin Concerto RIHM: Time Chant

Mutter: Chicago Symphony. Levine DEUTSCHE GRAMMOPHON 437 093 (52 min)

Performance: Impassioned and theatrical Recording: Superb

Anne-Sophie Mutter has taken a lot of grief over the years for being too sexy, too perfect technically, and too well connected in classical-music circles. This recording ought to quiet her detractors for a while. Even as an admirer, I was astonished at the originality and emotional depth of her interpretation of the Berg concerto, and I am impressed with her daring in pairing it with the Wolfgang Rihm piece, easily the most challenging contemporary work she has recorded.

For years, Itzhak Perlman's recording of the Berg on Deutsche Grammophon was recommended to those ambivalent about music written after World War I, but this one by Mutter and James Levine has more surface polish and ten times the fantasy. It ranks with Arthur Grumiaux's old Philips recording (now on CD)

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as one of the best-ever recorded realizations of the concerto. The dance in the rhythms and lightness in the playing lift the music out of the usual atonal murk. There is also a vivid touch of theater in the way the various sections present themselves, make their points, and then recede; no doubt Levine's experience conducting Berg's operas is a factor here.

Many of the same qualities are also present in the Rihm, whose ethereal atmosphere seems to pick up where the Berg concerto leaves off. *Time Chant* isn't a traditional concerto but an introspective soliloquy for violin and orchestra. If it's possible to achieve lyricism without melody, Rihm has done that here, with beautifully arching violin lines that Mutter plays with great expression. After several listenings, I find it an absorbing 25-minute musical journey—perhaps not equal to Berg's, but few are. *D.P.S.*

CASTELNUOVO-TEDESCO: Violin Concerto No. 2 ("The Prophets") BEN-HAIM: Violin Concerto Per[man: Israel Philharmonic, Mehta EMI 54296 (50 min)

Performance: Attractive Recording: Good

Ario Castelnuovo-Tedesco and Paul Ben-Haim were both Jewish refugees from fascism, the former from Italy (where his family lived for centuries). He settled in the U.S., where his romantically exotic Violin Concerto No. 2, written for Jascha Heifetz, once had a lot of success. Like most of his work, it has since been forgotten. Maybe this lush performance, recorded live in Tel-Aviv, will push it back into favor—it certainly has all the old-fashioned ingredients.

Ben-Haim, who fled Hitler's Germany to settle in Israel, was long that country's bestknown composer. His Violin Concerto, written for an older Israeli violinist, Zvi Zeitlin, offers a more modernist interpretation of traditional material than Castelnuovo-Tedesco's and, like the music of Stravinsky. Bloch, and Bartók, has a bit more bite. Still, it is almost equally accessible in this ingratiating performance by Itzhak Perlman, one of the greatest latter-day representatives of the Jewish fiddler tradition. *E.S.*

DEBUSSY: The Martyrdom of Saint Sebastian Soloists: London Symphony Chorus and Orchestra, Thomas SONY 48240 (66 min)

SUNY 48240 (66 min) Performance: Revelatory Recording: Lovely

The Martyrdom of Saint Sebastian, a product of Debussy's last years, was written in a great hurry to accompany an elaborate 1911 theater piece based on a text about the sexy saint by the poet Gabriele D'Annunzio. While the spare, rarefied, meditative music points forward to Messiaen and is occasionally performed, the five-hour stage work has never been revived. In presenting the music, most conductors settle for a somewhat rearranged concert version. Michael Tilson Thomas decided that the score is fine as Debussy left it, and he's right. But the most important thing about this release is the performance.

Thomas is an intelligent, resourceful advocate for this music; he makes it seem far less uneven than usual, and not because of any especially feverish conducting. If anything, he holds back a bit, accentuating the music's spareness and drawing in the listener to its sense of mystery. And what a marvelous score it is! Over and over, Debussy delivers distinctive solutions to dramatic problems he hadn't previously encountered, conveying moments of rapture, pain, or triumph with a small vocal ensemble, an unaccompanied chorus, or another type of musical resource rarely exploited elsewhere in his output. The soloists here-Sylvia McNair, Ann Murray, and Nathalie Stutzmann-are near perfect, and so is the understated narration by Leslie Caron. This could be a breakthrough recording. D.P.S.



DIAMOND: Symphony No. 1; Violin Concerto No. 2; The Enormous Room Talvi; Seattle Symphony, Schwarz DELOS 3119 (71 min) Performance: Top of the line Recording: First-class

Gerard Schwarz and the Seattle Symphony do themselves proud all the way on this CD, the most satisfactory release so far in Delos's continuing survey of the American composer David Diamond's orchestral music.

The First Symphony (1941) is taut and songful by turns. Its first movement is all high spirits; the second is in a lyrical vein with a lovely woodwind episode midway. The finale starts with contrasting elements based on Gregorian chant but culminates in fast action

Forbidden Music



Krister St Hill as Jonny in Jonny Spielt Auf

orngold's opera Das Wunder der Heliane and Krenek's opera Jonny Spielt Auf are the first two releases in London's ambitious project devoted to recordings of "Entartete Musik," works considered decadent and therefore banned by the Nazi regime. Future releases will represent the music of Hindemith, Weill, Eisler, and Toch, composers who managed to escape to the New World, and their gifted but less fortunate contemporarles Viktor Ullman and Hans Krasa, who perished in concentration camps. It is a highly laudable enterprise, and London has gone about it in the proper manner: The operas in this first release are well cast and attractively produced.

Curiously, when they were introduced, both in 1927, their composers found themselves in opposite aesthetic camps. Erich Wolfgang Korngold (1897-1957) carried on the harmonic vocabulary of Gustav Mahler and Richard Strauss. Ernst Krenek (1900-1991) was a twelve-tone composer and thus doomed at the outset despite his Aryan birth. Besides, he made the serious political blunder of introducing jazzy elements into Jonny Spielt Aul—a sensational success all over Europe before the Nazi takeover—elements held inimical to the purest and noblest German ideals.

Das Wunder der Hellane (Helen's Miracle) is a seething, soaring, sensuous score orchestrated with dazzling skill. The story—a morality tale with the strong erotic over-

tones many European composers of the period (Massenet, Zandonai, Montemezzi) favored-is saturated in mysticism. The conductor of this recording, John Mauceri, understandably relishes the lavish colors of the music and shows a magnificent command of its intricacies, though the singers are at times swamped in the orchestral glory. They are a hardworking and frequently inspired group interpreting strongly drawn characters. The soprano Anna Tomowa-Sintow is the angelic Heliane, who's married to a ruthless, evil Ruler portrayed by the baritone Hartmut Weiker. The tenor John David de Haan is the messianic Stranger who's brought back to life through Heliane's miracle. There is also a demonic Messenger. interpreted by the mezzo-soprano Reinhild Runkel, and a blind Judge, a role in which the tenor Nicolai Gedda emerges from a lengthy recording hiatus with distinction. All have their hands full with their extremely taxing assignments, and all deserve praise.

I find the verbosity and heavy mysticism of the libretto hard to take, but Korngold's music is fascInating in its colorful synthesis of various musIcal currents—even late Puccini—enhanced by his individual idiom. The opera deserves serious attention.

Jonny Spielt Auf (Johnny Strikes Up) is a more difficult case. The story involves an idealistic European composer named Max who finds himself confronted with the darlng innovations and presumed loose morality of the New World as embodled in the jazz musician Jonny. Encouraged by its European success, the Met produced the opera in 1929, but it falled to hold the stage. Nothing ages faster than "timely" shockers, and today's audiences would find Krenek's American allusions naïve, even embarrassing.

In contrast with Korngold's sensuous idiom, Krenek's music projects angularity, sharp rhythms, and biting dissonance. I did not respond to it with much emotional involvement, but, as with the Korngold, I am impressed with the achievement of the conductor, Lothar Zagrosek, and his able cast, particularly the soprano Alessandra Marc, whose rich-toned and fearless singing is quite astonishing, cloudy enunciation notwithstanding. The vocal-orchestral balances In this opera are just right, and the overall sound of both sets is topnotch. G.J.

KORNGOLD: Das Wunder der Heliane

Soloists: chorus: RSO Orchestra, Mauceri LONDON 436 636 (three CD's, 167 min)

KRENEK: Jonny Spielt Auf

Soloists; chorus; Gewandhaus Orchestra. Zagrosek

LONDON 436 632 (two CD's, 131 min)

music. The rich scoring is colorful, including full percussion and bells, but never over-loaded.

The Enormous Room (1948) was inspired by the poet E. E. Cummings's classic book of that title, which tells of his internment during World War I in a French prison camp. The single 15-minute movement, predominantly slow but attaining a kind of ecstatic fervor in the later sections, evokes an episode from the book in which one of the author's fellow inmates, a country constable, reacts exultantly to a pre-Christmas snowfall.

But the real find here—quite literally—is the Violin Concerto No. 2, composed in 1948 on commission from Arthur Percival (a pioneer in the coin-operated laundry business) for his violinist wife. Dorothea Powers. After a single performance with the Vancouver Symphony under Jacques Singer, problems with the Percival estate caused the concerto to disappear, in effect, for the next forty-six years. The present recording was made in September 1991 following its U.S. première in Seattle with the Seattle Symphony's concertmaster, Ilkka Talvi, as the violin soloist. Talvi has a small but warm tone, unerring intonation, and first-rate musicianship.

The music has true vitality and substance, and the concerto ranks with the finest mainstream American works of this century. Diamond was a practicing violinist in the earlier years of his professional life, and his solo writing is superbly idiomatic. Lyricism and energy suffuse the opening allegro. The slow movement has a wonderful melodic line, given added emotional weight by a near-sublime quasi-canonic episode. The finale again combines energy and lyricism, along with brazenly virtuosic solo writing.

Recommended without reservation! D.H.



GÓRECKI: Beatus Vir; Totus Tuus; Old Polish Music

Storojev: Prague Philharmonic Choir; Czech Philharmonic Orchestra, Nelson ARGO 436 835 (68 min) Performance: Impassioned Recording: Too dry

As Nonesuch's recording of Henryk Górecki's Symphony No. 3 continues selling at a phenomenal rate, the question inevitably arises if there's more where that came from. The answer has come in the form of three recent and wildly diverse Górecki CD's. two of which, on Olympia and Koch, explore his experimental early works. Only this one on Argo shows how the composer has progressed since the watershed Third Symphony in 1976, which began a period marked by austere or-

CLASSICAL MUSIC

chestration, clear tonal relationships, and the use of simple materials such as old Polish church chants.

The best piece here is the ecstatic *Beatus Vir*, for chorus and orchestra. Full of the sort of intriguing ambiguity that keeps the Third Symphony fascinating on repeated listenings, it's more challenging and accomplished but just as powerful. The harmonic writing often conveys terror and rapture simultaneously, with themes developed through minimalist-style repetition and the slow merging of different musical ideas. A harmonic rocking motion that initially seems like weary plodding eventually metamorphosizes into something resembling triumphantly pealing bells.

The other two pieces show rather different sides of the composer, though his voice is always unmistakable. Totus Tuus, for unaccompanied chorus, is so introspective that it recalls Liszt's late works. Conductor John Nelson shapes it sympathetically, but his efforts are undercut by an ungenerous acoustic that fails to provide the aural halo needed to show the music to best advantage. Old Polish Music is recorded with more ambience but still not enough. It consists of three distinct gestures for two different brass choirs with strings; the gestures contrast and eventually merge in a number of ingenious and emotionally gratifying ways. But Górecki clearly intended for the listener to contemplate the shifting textures of the sound itself more than is possible in this recording. D.P.S.

LEONCAVALLO: Pagliacci

Pavarotti, Dessi, Pons, Coni, Gavazzi; Choruses: Philadelphia Orchestra, Muti PH1L1PS 438 132 (80 min)

> Performance: Gripping Recording: Excellent

ecorded live at the Philadelphia Academy of Music, this performance has the drive so often lacking these days in studio-made recordings-triumphs of technology but frequently short on emotional intensity. There are three stars here. The conductor Riccardo Muti, thoroughly at home with Leoncavallo's score, brings to the music a strong sense of drama, which he never overplays, and telling dynamic contrasts. The Philadelphia Orchestra still has its legendary sumptuousness of tone, rarely heard elsewhere these days, and its splendid playing is another of the star qualities of the set. And then there is the tenor Luciano Pavarotti, in fine vocal fettle here. proving that when challenged-as he clearly was in this case-he is an artist sensitive to musicality and characterization

As Nedda, the soprano Daniela Dessi employs her light but pleasing voice to good effect. Juan Pons brings to the portrayal of Tonio not only warmth but also more refined singing than some of the baritone's recent recordings have displayed. Baritone Paolo Coni's Silvio is properly ardent and seductive. And tenor Ernesto Gavazzi's Beppe is a solid and welcome contribution.

No matter how familiar. Leoncavallo's mu-

sic glimmers with melody and flares with passion. This first-rate recorded performance does it justice. *R.A.*

SCHUBERT: Goethe Lieder

Fassbaender; Garben SONY 53104 (67 min) Performance: Committed Recording: Good

Erlkönig, with which this absorbing recital of twenty-four songs on poems of Goethe begins, gives a good indication of what to expect: committed singing of great emotional involvement, shorter on polished vocalism than on characterization and communication. The mezzo-soprano Brigitte Fassbaender's opulent sound takes on a special warmth and solidity in the low register, and a few wavery sustained notes on top need not detain us long.

A special highlight is the generous representation of the Mignon songs, with true despair voiced by the harper (Gesänge des Harfners 1. H. and HD and melancholia and ultimate dejection in the songs of Mignon herself (Lied der Mignon F, H, and HI). The same near-operatic intensity is the keynote to the ecstatic Rastlose Liebe and Ganymed. Unalloyed playfulness (Der Musensohn) is not Fassbaender's forte. and her Liebhaber in Allen Gestalten asserts itself with a true feminist ring. The early Der Sänger-more a dramatic recitative than a conventional lied-is an interesting addition: Cord Garben, a powerful pianist, is a worthy partner to this vital singer. G.L

Can one piano sing the passion of Puccini's greatest arias?

ECIDE FOR YOURSELF. John Bayless continues to share his soaring, expansive—and unabashedly passionate vision with us in THE PUCCINI ALBUM: ARIAS FOR PIANO. But did this dynamic young man do something even more

unorthodox? Did he challenge the boundaries of the traditional opera itself? Recently he shared his thoughts. Angel Records: Did you break the rules when you improvised on Puccini?

John Bayless: Whose rules? Certainly not Puccini's. Great music was traditionally scored

for improvisations. I went further. Besides, it's my way of sharing in his passion, his honesty. Of course I'm playing Puccini, but not just the vocal parts. I'm playing the whole thing, the orchestra, the solos, the libretto (you can never lose sight of those great stories) ...even imaginary scenery, from my heart! In fact, much of the work is inspired by images that come to me from the music; I like to think of it as "painting with the piano." So naturally, I'm also playing Bayless like you've never heard him before. AR: *How does it differ from your other records?*

JB: You can't really compare them. This is a whole different set of challenges. Now I'm working with my favorites from Tosca. La



Bohème, Madama Butterfly and a few others. With a single piano, I'm trying to draw an audience deeper into the music of Puccini, no matter how much they love opera, or how little. That's my job. That's what I do. I even try to imagine how an audience would react. That's why I love endings. It's when people applaud. AR: Would Puccini himself applaud ARIAS FOR PIANO?

JB: Oh, I would hope so. I mean...I didn't know the man! But still, I like to think that we've had several long conversations, through







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CLASSICAL MUSIC



SCHUMANN: Piano Concerto; Arabesque GRIEG: Carnival Scene; Ich Liebe Dich SCHUBERT/LISZT: Die Forelle; Erlkönig

LISZT: Valse Caprice No. 6 Vienna Philharmonic, Giulini SONY 52567 (60 min) Performance: Superb solo pieces

Recording: Close-up The big item here is of course the Schumann Piano Concerto, recorded live, while the six pieces for piano alone appear to be random encores or "fillers." But it is the studio-recorded solos that make this package exciting. In the concerto, Kissin is downright dazzling without ever quite taking wing, and Carlo Maria Giulini's heavy, monumentalizing approach seems to be at odds with both the nature of the work and the animation in Kissin's playing. And the lengthy applause after the concerto would have broken any mood.

The solo pieces, happily, are marred by no such irritant, and all of them find Kissin at his magical best, compounding brilliance with a high level of poetry. He seems to be creating the music rather than merely performing itnot by taking liberties, but by dint of his impassioned and joyous involvement. Grieg's Carnival Scene in particular (No. 3 of the Op. 19 Lyric Pieces) will surely draw listeners back again and again with unfading wonder and delight. The interweaving of elegant wit with warmth of heart in the Liszt Valse Caprice is hardly less remarkable. Whether as a sampler of Kissin cycles to come or simply for the very considerable pleasures it affords in its own right, this half of the disc is quite irresistibledespite, it must be added, a sonic focus so close up as to be less than flattering to the piano, especially in quiet passages. R F

SIBELIUS: Kullervo

Soloists: Helsinki University Chorus: Los Angeles Philharmonic, Salonen SON Y 52563 (70 min)

Performance: Very good Recording: Excellent

Kullervo. designated by its twenty-sixyear-old composer as a "symphonic poem for soprano, baritone, male chorus, and orchestra," is a massive, five-movement work in a grandiose national-Romantic style. Some elements reflect Sibelius's experience of hearing Finnish back-country people intoning the verses collected in the national folk epic. *Kale-vala*—and the work recounts the tragic tale of a singularly ill-starred personage from it—but there is no overt use of folk music. It's an amazing score from a young man, its finest moments shot through with genius. But after conducting the acclaimed first performance, in 1892. Sibelius permitted no further performances during his lifetime, and he never again composed on such a vast scale.

This Sony CD was recorded barely two months short of the centenary of the Helsinki première, with Finland's young star conductor, Esa-Pekka Salonen, leading his Los Angeles orchestra. The soprano Marianna Rørholm portrays Kullervo's ill-fated sister and the peerless baritone Jorma Hynninen the tragic hero himself in the two vocal movements. Rørholm seems somewhat overmatched by Hynninen in the early pages of the third movement but gains in strength and dramatic conviction as it nears its climax. Hynninenwho figures in both the Kullervo recordings previously released on CD. Paavo Berglund's 1986 EM1 version (no longer available) and Neeme Järvi's on Bis-is in first-rate form. The Los Angeles players are on their toes all the way, and the Helsinki chorus is superb.

The performance overall carries conviction. though Salonen's rather headlong pacing in the first half of the third movement. "Kullervo and His Sister." which is the heart of the work, weakens its impact (Järvi's performance is even more extreme in this regard). UCLA's

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CLASSICAL MUSIC

Royce Hall yields a powerful and well-focused sound, but the lateral stereo imaging is not as good as I would like. Nonetheless, since neither the 1986 Berglund recording nor his earlier 1971 set on Angel is presently available, I would opt for Salonen's CD over Järvi's. D.H.

> TELEMANN: Chamber Music Ensemble Florilegium CHANNEL CLASSICS 5093 (53 min) Performances: Rich without schmalz Recording: Heavy-duty

elemann's chamber music-a large number of trio sonatas and quartets for flutes (including recorders) and strings with continuo-reaches a kind of climax in the "Paris" Quartets, represented here by No. 6, in E Minor. A dance suite prefaced by an overture and ending with a big chaconne, it is in a class with the great suites of Couperin and Bach. Two Italian-inspired sonatas, a curious "Quadro" in G Minor, and a virtuosic A Minor Concerto with a wild peasant-dance finale fill out the disc and display a remarkable musical range. Ensemble Florilegium digs in with a gloves-off, hands-on, heavyweight approach that works very well, suggesting that Telemann's reputation as a Baroque lightweight may have resulted from too many skinny oldemusic outings low in nutritional value. These performances prove it is possible to play Telemann in a warm, rich, and satisfying way without resorting to Romantic schmalz.

One caveat: The program listings are in an almost unreadable fine print, and the notes are almost devoid of information. *E.S.*

Collection

CARLOS BARBOSA-LIMA

Ginastera's Sonata CONCORD CONCERTO 42015 (64 min) Performance: Strong

Recording: In your face

Alberto Ginastera's Sonata for Solo Guitar, written for Carlos Barbosa-Lima in 1976, gives the title to this album, and it does indeed dominate a collection that also includes two other large-scale works—a Concertino for Guitar and String Quartet by Albert Harris (a little-known Hollywood composer and arranger) and a substantial Sonatina for Guitar and Piano by a Brazilian with the wonderful name of Radames Gnattali—as well as smaller pieces by three Latin American guitarist/composers (Agustín Barrios. Antonio Lauro, and Laurindo Almeida) and an arrangement of music by another wonderfully named Brazilian. Gaudencio Thiago de Mello.

The Ginastera is an impressive composition, a rare contribution to the "serious" solo-guitar repertory and a virtuoso achievement for the performer. Aside from it, the best music here is in the shorter pieces created in traditional manner by guitarists themselves. Barbosa-Lima is a very genial player who catches the rhythmic fire and dissonant color of the Ginastera but is equally at home with the more popular turns of phrase and expressive Latinisms of some of the other music. The recording is very close—particularly in the piano-andguitar combinations. *E.S.*

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QUICK FIXES

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BACH: Suites; Flute Concerto Boston Early Music Festival, Parrott EM1 54653 (two CD's, 111 min)

These performances of the Bach suites are astonishingly similar to those William Malloch previously recorded with the same musicians on the Koch label. Malloch pioneered the notion that the so-called "adagios" and "allegros" of these works were intended to be played at the same tempo. that the string sections should have one player to a part (with no cellos or basses at all in the Suite No. 1), and that all this music should be fast, dancey, and essentially unritarded. Andrew Parrott's versions are good enough, and there is the bonus of a little-known flute concerto arranged from a keyboard original. But check out Malloch's own lively readings-lively enough to fit on a single CD. E.S.

BEETHOVEN: Sonatas Nos. 27-29 John O'Conor (piano)

TELARC 80335 (73 min)

Many listeners who take more pleasure in having the composer's wishes respected than in having a performer present "his" Beethoven have found John O'Conor's sound, musicianly performances of the Beethoven sonatas consistently satisfying. This apparently penultimate installment in his cycle comfortably upholds the standards set in the earlier ones, with No. 29 ("Hammerklavier") marked by a fine sense of proportion and the characters of Nos. 27 and 28 splendidly delineated. Top marks once again for the realistic sound and illuminating annotation. *R.F.*



DEBUSSY: Preludes, Book I; Images, Sets 1 and II

Paul Crossley (piano)

SONY 52583 (76 min)

Paul Crossley's stimulating and refreshing view of Debussy's piano music has the effect of clarifying, rather than contravening, traditional notions of its character. There is atmosphere aplenty in his playing, there is evocativeness, but there is also a sense of musical purpose that both comes from and impels the deepest and truest commitment. While not surpassing the treasured recordings by Gieseking, Arrau, and Jacobs, these stunning realizations are eminently worthy companions to them, and handsomely recorded. It is heartening to see this disc labeled "Vol. ! of 4." *R.F.*

MAHLER: Symphony No. 1; Blumine City of Birmingham Symphony, Rattle EMI 54647 (65 min)

The "Blumine" movement that Mahler discarded from his First Symphony gets a lovely performance here, and it conveniently precedes the symphony on the disc—though you can program it in its erstwhile position between the first two movements if you wish. Simon Rattle brings out many lovely details in the symphony, too, but the performance is a mite short on animation and slacks off at the big climaxes—and the applause at the end all but obliterates its impact. R.F.



TCHAIKOVSKY: Suite No. 3; Festival Coronation March USSR Ministry of Culture Symphony, Rozhdestvensky ERATO 45970 (46 min)

Considering the popularity once enjoyed by the final movement of the Suite No. 3, a theme and variations used as a Balanchine dance vehicle. I was surprised at the suite's sparse representation on CD. Gennady Rozhdestvensky takes a broader view of this agreeable score, with more detailed inflection, than most other conductors, notably in the finale. The sound is decent, the playing fine. The march chosen as the filler piece is fun listening. D.H.

JOSÉ CARRERAS

The Pleasure of Love English Chamber Orchestra, Sutej PHILIPS 434 926 (51 min)

The seventeen selections in this pleasant, well-recorded recital include the title song (Martini's *Plaisir d'Amour*), familiar eighteenth-century songs and arias by Antonio Scarlatti, Caldara, Handel, Bononcini, and others, and two charming Neapolitan-style songs by Donizetti and Mercadante. Singing in comfortable keys that rarely lift the range above F, this likable tenor enfolds his music in warmly caressing sound and modulates his tone with sensitivity, only occasionally yielding to Romantic ardor. *G.J.*

CHEE-YUN

Vocalise

DENON 75118 (49 min)

Playing violin showpieces such as the *Meditation* from *Thaïs*, the Korean violinist Chee-Yun reveals a warm tone and a poetic way of phrasing. She is a real artist. Her performance of a suite from Bernstein's *West Side Story* recalls Jascha Heifetz's transcriptions of Gershwin. Akira Eguchi at the piano is an equal partner, and they are both young musicians to watch.

William Livingstone

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		RA RA4 400/0410
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SX 201 VSA 7500 A301 F449 SP 700D GR 777 GR 555 GR 470 VSP 333 PDTM3	AM5 Power Sys. AM3 Spkr. Sys. AM3 Pwr. Sys.	TS-C1601 109/PAIR TS-C1301 105/PAIR TS-TRX70 209/PAIR
SX 201 VSA 7500 A301 F449 SP 700D GR 777 GR 555 GR 470 VSP 333 PDTM3 PDDM902 PDDM802	AM5 Power Sys. AM3 Spkr. Sys. AM3 Pwr. Sys. Roomate II	TS-C1601 109/PAIR TS-C1301 105/PAIR TS-TRX70 209/PAIR TS-TRX60 149/PAIR TS-TRX50 119/PAIR
SX 201 VSA 7500 A301 F449 SP 700D GR 777 GR 555 GR 470 VSP 333 PDTM3 PDDM902 PDDM802 PDM702 PDM 502 PD202 PD 102	AM5 Power Sys. AM3 Spkr. Sys. AM3 Pwr. Sys.	TS-C1601 109/PAIR TS-C1301 105/PAIR TS-TRX70 209/PAIR TS-TRX50 149/PAIR TS-TRX50 119/PAIR TS-A6908 119/PAIR
SX 201 VSA 7500 A301 F449 SP 700D GR 777 GR 555 GR 470 VSP 333 PDTM3 PDDM902 PDDM802 PDM702 PD 102 CTWM 52R CTWM 52R CTWM 52R CTWM 52R	AMS Power Sys. AM3 Spkr. Sys. AM3 Pwr. Sys. Roomate II Free Style Sys. 901 VI 601 III Se1 IV 401	TŠ-C1601 109/PAIR TS-C1301 105/PAIR TS-TRX70 209/PAIR TS-TRX70 149/PAIR TS-TRX50 149/PAIR TS-TRX50 119/PAIR TSA69007 85/PAIR TSA6907 85/PAIR TSA6905 79/PAIR
SX 201 VSA 7500 A301 F449 SP 700D GR 777 GR 555 GR 470 YSP 333 PDTM3 PDDM902 PDDM802 PDM702 PDM 502 PD2020 PD 102 CTWM 62R CTWM 92R CTW 402R CTW 502R CTW 402R CTW 502R	AM5 Power Sys. AM3 Spkr. Sys. AM3 Pwr. Sys. Roomate II Free Style Sys. 901 VI 661 III	TŠ-C1601 109/PAIR TS-C1301 105/PAIR TS-TRXT0 209/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TSA6900 119/PAIR TSA6900 119/PAIR TSA6905 79/PAIR TSA6905 79/PAIR
SX 201 VSA 7500 A301 F449 SP 700D GR 777 GR 555 GR 470 VSP 333 PDTM3 PDDM902 PDDM802 PDM702 PDM 502 PD2020 PD 102 CTWM 62R CTWM 92R CTW 62R CTW 302R CLW 402R CLW 302R CLDD 702 CLDD 502 CLDM 401 CLDM 301	AM5 Power Sys. AM3 Spir. Sys. AM3 Pirr. Sys. Roomata II Free Style Sys. 901 V1 601 III Se1 IV 401 Ja1 III 201 III 101 AND MOREI SHARP	T\$-C1301 109/PAIR T\$-C1301 105/PAIR T\$-TRX70 209/PAIR T\$-TRX50 149/PAIR T\$-TRX50 119/PAIR T\$A6908 119/PAIR T\$A6907 83/PAIR T\$A6905 79/PAIR T\$A6905 79/PAIR T\$A6905 69/PAIR T\$A4105 75/PAIR T\$A4105 88/PAIR
SX 201 VSA 7500 A301 F449 SP 700D GR 777 GR 555 GR 470 VSP 333 PDTM3 PDM902 PDDM802 PDM702 PD 502 PD202 PD 102 CTWM 52R CTWM 502R CTW 602R CTW 502R CLDD 702 CLDD 502 CLDM 401 CLDM 301 CLDS 201 KARADKE ACESSORIES	AM5 Power Sys. AM3 Spir. Sys. Roomats II Free Style Sys. 901 VI 601 III 361 IV 401 361 III 201 III 161 AND MOREI SHARD FACTORY NEW	TŠ-C1601 109/PAIR TS-C1301 105/PAIR TS-TRXT0 209/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TSA59008 119/PAIR TSA69005 79/PAIR TSA6905 79/PAIR TSA5705 69/PAIR TSA105 75/PAIR TSA1608 85/PAIR TSA1608 69/PAIR
SX 201 VSA 7500 A301 F449 SP 700D GR 777 GR 555 GR 470 VSP 333 PDTM3 PDDM902 PDM802 PD2020 PD 102 CTWM 502R CTWM 902R CTW 602R CTW 902R CTW 402R CTW 902R CLD 402R CLD 502 CLDD 702 CLD 502 CLDD 702 CLD 502 CLDS 201 KARAOKE ACCESSORIES CL0V920 CLD9720 CL0V720	AM5 Power Sys. AM3 Spirr. Sys. AM3 Pirr. Sys. Roomata II Free Style Sys. 901 V1 601 III Se1 IV 401 301 III 201 III 101 AND MOREI SHARP FACTORY WARRANTEED FACTORY COMPLETE	TŠ-C1501 109/PAIR TS-C1301 105/PAIR TS-TRX70 209/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TSA5900 119/PAIR TSA6900 159/PAIR TSA6905 79/PAIR TSA5705 69/PAIR TSA1608 85/PAIR TSA1660 59/PAIR TSA1660 59/PAIR TSA1330 49/PAIR
SX 201 VSA 7500 A301 F449 SP 700D GR 777 GR 555 GR 470 YSP 333 PDTM3 PDDM902 PDDM802 PDM702 PDM 502 PD202 PD 102 CTWM 62R CTWM 602R CTW 62R CTW 302R CLDD 702 CLD 502 CLDD 702 CLD 301 CLDS 201 KARA0KE ACCESSORIES CLDV20 CL0V20 LASER AUDID SYSTEMS/	AM5 Power Sys. AM3 Spir. Sys. AM3 Port. Sys. Roomata II Free Style Sys. 901 VI 601 III 381 III 201 III 101 AND MOREI SHARPP FACTORY NEW FACTORY WARRANTEED FACTORY COMPLETE XVH30 2799	TŠ-C1601 109/PAIR TS-C1301 105/PAIR TS-TRXT0 209/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TS-TRX50 119/PAIR TSA69005 19/PAIR TSA6905 79/PAIR TSA5705 69/PAIR TSA1608 85/PAIR TSA1608 85/PAIR TSA1600 69/PAIR TSA1600 69/PAIR TSA1500 69/PAIR TSA1390 49/PAIR
SX 201 VSA 7500 A301 FA49 SX 760D GR 777 GR 555 GR 470 VSP 333 PDTM3 PDM702 PDM802 PD0702 PDM 802 PD0702 PD M802 CTWM 62R CTWM 902R CTWM 602R CTWM 902R CTW 402R CTW 302R CLDD 702 CLDD 502 CLDS 201 KARA031 CLDS 201 KARA031 CLDS 201 KARAE AUDID SYSTEMS/ SPEAKERS	AM5 Power Sys. AM3 Spirr. Sys. AM3 Pirr. Sys. Roomata II Free Style Sys. 901 V1 601 III Se1 IV 401 301 III 201 III 101 AND MOREI SHARP FACTORY WARRANTEED FACTORY COMPLETE	TŠ-C1601 109/PAIR TS-C1301 105/PAIR TS-TRXT0 209/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TSA59008 119/PAIR TSA69005 79/PAIR TSA6905 79/PAIR TSA5705 69/PAIR TSA1505 69/PAIR TSA1608 85/PAIR TSA1608 69/PAIR TSA1500 69/PAIR TSA1500 49/PAIR TSA1500 49/PAIR
SX 201 VSA 7500 A301 F449 SP 700D GR 777 GR 555 GR 470 YSP 333 PDTM3 PDDM902 PDDM802 PDM702 PDM 502 PD202 PD 102 CTWM 62R CTWM 602R CTW 62R CTW 302R CLDD 702 CLD 502 CLDD 702 CLD 301 CLDS 201 KARA0KE ACCESSORIES CLDV20 CL0V20 LASER AUDID SYSTEMS/	AM5 Power Sys. AM3 Spir. Sys. AM3 Spir. Sys. Roomata II Free Style Sys. 901 V 601 III 361 IIV 401 361 III 201 HI 101 AND MOREI SHARP FACTORY NEW FACTORY NEW FACTORY COMPLETE XVH30 XVH20 2349 XV1250 4499	TŠ-C1301 109/PAIR TS-C1301 105/PAIR TS-TRXT0 209/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TSA5900 119/PAIR TSA6900 159/PAIR TSA6900 79/PAIR TSA5705 69/PAIR TSA1600 59/PAIR TSA1600 59/PAIR TSA1660 59/PAIR TSA1390 49/PAIR MARINE SPEAKERS TS-MR163 150/PAIR TS-MR165 110/PAIR
SX 201 VSA 7500 A301 FA49 SP 700D GR 777 GR 555 GR 470 VSP 333 PDTM3 PDDM902 PDDM802 PDM702 PDM 502 PD202 PD 102 CTWM 62R CTWM 602R CTW 62R CTW 602R CLDD 702 CLD 502 CLDM 401 CLDM 301 CLDV20 CL0V420 ASER AUDID SYSTEMS/ SPEAKERS AND MDREH	AM5 Power Sys. AM3 Spir. Sys. AM3 Spir. Sys. AM3 Port. Sys. Roomatu II Free Style Sys. 901 VI 601 III Sel1 IV 401 381 III 201 III 191 AND MOREI SHARPP FACTORY NEW FACTORY WARRANTEED FACTORY COMPLETE XV120 XV120 2349 XV101 2525 XVS250 4499 XVP10 1448	TŠ-C1601 109/PAIR TS-C1301 105/PAIR TS-TRXT0 209/PAIR TS-TRXT0 149/PAIR TS-TRX50 149/PAIR TS-TRX50 119/PAIR TSA59005 19/PAIR TSA5905 79/PAIR TSA5705 69/PAIR TSA105 75/PAIR TSA1608 85/PAIR TSA1608 69/PAIR TSA1600 69/PAIR TSA1600 69/PAIR TSA1600 49/PAIR MARINE SPEAKERS TS-MR163 85/PAIR TS-MR165 110/PAIR TSATORY US WTY
SX 201 VSA 7500 A301 F449 SP 700D GR 777 GR 555 GR 470 YSP 333 PDTM3 YSP 333 PDTM3 PDM902 PDM802 PDM702 PD 102 CTWM 62R CTWM 602R CTW 602R CTW 602R CTW 602R CTW 602R CTW 602R CTW 602R CLDM 401 CLD 502 LLDS 201 KARA0KE ACCESSORIES SPEAKERS AUDID SYSTEMS/ SPEAKERS AUD MDREH CSG403 SV401 V401 MHT SUBISHI HSU82	AM5 Power Sys. AM3 Spir. Sys. AM3 Spir. Sys. Roomata II Free Style Sys. 901 VI 601 III 361 III 201 III 101 AND MOREI SHARP FACTORY NEW FACTORY NEW FACTORY NEW FACTORY NEW FACTORY COMPLETE XVH30 2799 XV120 2349 XV101 2525 XVS250 4499 XVF10 1449 XGH400 CALL YMT30V NEW H-RES	TŠ-C1601 109/PAIR TS-C1301 105/PAIR TS-TRXT0 209/PAIR TS-TRXT0 209/PAIR TS-TRXT0 209/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TS-TRX50 119/PAIR TSA5908 119/PAIR TSA6907 58/PAIR TSA5905 79/PAIR TSA5705 69/PAIR TSA1608 85/PAIR TSA1670 69/PAIR TSA1660 59/PAIR TSA1660 59/PAIR TSA1660 59/PAIR TSA1860 49/PAIR MARINE SPEAKERS TS-MR163 TS-MR165 110/PAIR SCONY CAR FACTORY US WTY FACTORY COMPLETE
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SX 201 VSA 7500 A301 FA49 SX 700D GR 777 GR 555 GR 470 VSP 333 PDTM3 PDM702 PDM 502 PDM702 PD 4002 PD202 PD 102 CTWM 52R CTWM 802R CTW 402R CTW 402R CLD 702 CLD 502 CLD 702 LASER AUDID SYSTEMS/ SPEAKERS AND MDREH CS6403 SV401 V401 MET SUBSHI HSU56 HSU57 PANASONIC PVS52 PV32	AMS Power Sys. AM3 Spir. Sys. AM3 Spir. Sys. Roomats II Free Style Sys. 901 VI 601 III 381 III 201 IV 381 III 201 III 101 AND MOREI SHARD FACTORY NEW FACTORY NEW FACTORY NEW FACTORY COMPLETE XV120 2349 XV121 2525 XV8250 4499 XVP10 1449 XGH400 CALL YMT30V NEW HI-RES 4" Color T.V./Viewfinder A/C A/C, D/C 469 YLL30 2799	TS-C1601 109/PAIR TS-C1301 105/PAIR TS-TRX70 209/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TS-TRX50 119/PAIR TS-TRX50 119/PAIR TSA5908 119/PAIR TSA5905 79/PAIR TSA5905 69/PAIR TSA5105 69/PAIR TSA1608 85/PAIR TSA1600 98/PAIR TSA1600 59/PAIR TSA1600 59/PAIR TSA1600 59/PAIR TSA1870 49/PAIR TSA1870 49/PAIR TSA1300 49/PAIR TS-MR163 85/PAIR TS-MR163 110/PAIR EONY CAP FACTORY NEW FACTORY NEW FACTORY NEW FACTORY COMPLETE CDX5000 CDX5000 CDX4040
SX 201 VSA 7500 A301 FA49 SX 700D GR 777 GR 555 GR 470 GR 555 GR 470 PDM702 PDM802 PD0702 PD 102 CTWM 62R CTWM 602R CTW 62R CTW 602R CTW 62R CTW 602R CTW 62R CTW 302R CLD 702 CLD 502 LASER AUDID SYSTEM S/ SPEAKERS AND MDREI CS6403 SV401 V401 MHT SUBISHI HSU35 HSU37 PANASON IC PV32 PV32 PV32 PV31 PV3770	AM5 Power Sys. AM3 Spir. Sys. AM3 Spir. Sys. Roomata II Free Style Sys. 901 VI 11 12 14 11 11 11 11 11 11 12 12 11 12 12 12 12 12 12 12 12 12 12 12 12	TŠ-C1601 109/PAIR TS-C1301 105/PAIR TS-TRXT0 209/PAIR TS-TRXT0 209/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TSA5908 119/PAIR TSA6907 85/PAIR TSA5905 69/PAIR TSA5705 69/PAIR TSA1608 85/PAIR TSA1608 85/PAIR TSA1600 69/PAIR TSA1601 69/PAIR TSA1602 59/PAIR TSA1500 69/PAIR TSA1500 69/PAIR TSA1650 100/PAIR TSA1650 100/PAIR TSA1650 100/PAIR TSA1650 100/PAIR TSA1650 100/PAIR TSATORY COMPLETE CDX1000 CDX10300 CDX4040 CDX-10300 CDX4040 CDX-10300 CDX4040 <
SX 201 VSA 7500 A301 F449 SP 700D GR 777 GR 555 GR 470 YSP 333 PDTM3 PDM902 PDDM802 PDM702 PDM 502 PDM702 PDM 502 PDM702 PLM 502 CTWM 62R CTWM 802R CTW 62R CTW 802R CTW 402R CTW 302R CLD 702 CLD 502 CLD 702 CLD 502 CLD 702 CLD 502 CLD 702 CLD 502 CLD 702 CLM 301 CLDS 201 KARA0K3 ACCESSORIES CLOV202 CLW 302R KARA0K3 SPEAKERS AND MDREH CS6403 SV401 V401 MET MSU82 MSU87 HSU82 PSU87 PV32 PV22 PV18 PV370 PV756 PV370 PV370 PV370	AMS Power Sys. AM3 Spir. Sys. AM3 Spir. Sys. AM3 Porr. Sys. Roomats II Free Style Sys. 901 VI 601 III 361 III 201 IV 361 III 201 III 101 AND MOREI PACTORY NEW FACTORY NEW FACTORY NEW FACTORY COMPLETE XVH30 XV101 2525 XV20 2349 XV101 2525 XV920 4499 XV101 2525 XV200 CAL VK100 CAL VGH400 CAL VGH400 CAL VH30V NEW HI-RES 4" Color T.V./Viewfinder A/C, D/C 469 VLL 60 W/CASE 619 VLL 62 W/CASE 619 VLL 72 W/CASE 649	TŠ-C1601 109/PAIR TS-C1301 105/PAIR TS-TRXT0 209/PAIR TS-TRXT0 209/PAIR TS-TRX50 149/PAIR TS-TRX50 119/PAIR TSA5903 119/PAIR TSA6907 85/PAIR TSA5705 69/PAIR TSA1505 69/PAIR TSA1508 85/PAIR TSA1650 89/PAIR TSA1650 69/PAIR TSA1650 69/PAIR TSA1650 69/PAIR TSA1300 49/PAIR MARINE SPEAKERS TS-MR153 85/PAIR TS-MR155 110/PAIR FACTORY US WTY FACTORY NEW FACTORY NEW FACTORY NEW FACTORY COMPLETE CDX5180 CDX-455 TX-180 RMX2001 CDX-1300 CDX-4308 FM
SX 201 VSA 7500 A301 F449 SX 700D GR 777 GR 555 GR 470 SS 700D GR 777 GR 555 GR 470 PDM702 PDM 802 PDM702 PD 102 CTWM 62R CTWM 602R CTW 62R CTW 602R CTW 62R CTW 602R CTW 62R CTW 302R CLD 702 CLD 502 LASER AUDID SYSTEM S/ AUDID SYSTEM S/ SPEAKERS AND MDREII CSG403 SV401 V401 MHT SUBISHI HSU85 HSU85 HSU87 PANASON HC PV582 PV32 PV32 PV720 PV332	AM5 Power Sys. AM3 Spir. Sys. AM3 Spir. Sys. Roomata II Free Style Sys. 901 VI 11 12 14 14 14 14 14 14 14 14 14 12 12 12 12 12 14 12 12 14 14 14 14 14 14 14	TS-C1601 109/PAIR TS-C1301 105/PAIR TS-TRX70 209/PAIR TS-TRX70 209/PAIR TS-TRX50 149/PAIR TS-TRX50 149/PAIR TSA6908 119/PAIR TSA6907 85/PAIR TSA6907 85/PAIR TSA6905 79/PAIR TSA5705 69/PAIR TSA1608 85/PAIR TSA1608 85/PAIR TSA1600 69/PAIR TSA1601 59/PAIR TSA1602 49/PAIR TSA1603 85/PAIR TSA1604 85/PAIR TSA1650 59/PAIR TSA1680 85/PAIR TS-MR165 110/PAIR FACTORY LOW CONSOUR CDX-4000 CDX100 CDX-4000 CDX500 CDX-4050 CDX-0500 CDX-4050 CDX-0500 CDX-4050 CDX-0500 CDX-4050 CDX-0500 CDX-4050 CDX-0500 CDX-4050 <
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THE HIGH END by ralph hodges

Things That May Not Last

udio can be transitory, as this column proposed a few months ago. Sound systems occasionally slip off the mark for no determinable reason, and performance that was once transporting begins to sound strained and artificial. Even things about which we've had fair warning can strike inopportunely and cause difficulty. Let's look at a couple of examples.

Uninfatuated as I have been with the cassette medium, I still have a substantial library of such tapes, the best of which were produced by the original Advent Corporation at a time when the principal thrusters in Henry Kloss's campaign to make the cassette respectable were Dolby B noise reduction and chromium-dioxide tape. The Advent tapes were recorded at a very conservative double speed on Du Pont's Crolyn tape stock. The project was, at least for a time, under the supervision of Tomlinson Holman, so all the engineering niceties were strictly observed. A certain amount of the Advent material came from local musical performances and Advent microphones, so these recordings, available in no other format, were invaluable keepsakes.

It is now well over ten years since those tapes were made, and I've just discovered that the majority of mine play back with a sound that aggressively impinges on dreadfulness. The reason is print-through. Adjacent layers of tape on the reel hubs have magnetically transferred their signals to each other, and now there are sturdy "pre-echoes" at the beginnings of pieces and a general muddle within them. It is something I had not expected. STEREO REVIEW had received a very early sample of the Du Pont product, and at the time we had no tape recorder with adequate bias to get a significant signal on it. Now it suddenly appears that the tape can record itself, and with no bias whatsoever.

When matters involving chromium dioxide arise, I like to turn to Terry O'Kelly of BASF, now the major chrome tape producer. Terry was anything but fazed by my report. First of all, he pointed out, chrome has a low Curie point, and even temperatures not so high as to endanger human life can alter its magnetic imprint.

Then he went on to discuss the print-through mechanism in general. A good magnetic particle for tape has a needle (acicular) shape, possessed of stability because north and south poles are remote from each other. Blunt or fracture the needle through excessive milling (the process in which particles and the fluid binder are blended to create the pigment that is painted onto the tape backing) and its integrity-its resistance to printthrough-is impaired. Such coarse milling was common even a decade or so ago, and O'Kelly ruefully suggests that the practice of magazine tape testers examining only factory-fresh samples means that continuing misguided production procedures may slip through the cracks. Print-through normally shows up only after the passage of some time.

A worse phenomenon, O'Kelly believes, is the tendency of some ferrithe development of print-through in the opposite tape direction. At some point in time, the print-through in both directions will be at equal and (one hopes) unobtrusive levels, and this is the desired condition to maintain, by alternating storage procedures or, more conveniently, by transferring the recording to more modern low-printthrough tape stock.

I embarked upon this inquiry because the laser-pickup assembly in my CD player had suddenly quit and I needed alternative program sources. In the early days of CD, there was much speculation on how long a player would last, and the laser-diode light source was predicted to be a particular vulnerability. Now it appears that the pickup photodiodes as well as the moving-coil guidance and focusing servos are also frailties, but it is difficult to determine which parts are the most culpable, because the assemblies are never diagnosed or repaired. (If you saw the extreme precision with which they're manufactured, you'd know why Ed's TV Fixit Shop isn't going to attempt to open them up.) They go to the junkpile.

l asked a Sony spokesman what the typical service record for an early Sony player might be at this time—a

Most of my Advent prerecorded cassettes, now well over ten years old, play back with a sound that impinges on dreadfulness. The reason is print-through.

cobalt formulations (the other Type II tape variety) to lose high frequencies with age. This instability, when present, seems to occur whether the tape is played frequently or not, and it is not correctable. Print-through, on the other hand, can be addressed through the time-honored method of storing the afflicted cassette with Side A "tail out," meaning that you'll have to rewind the cassette if you wish to play it from the beginning. Such storage will progressively erase the print-through that has occurred while encouraging

decade later. He said that, unless there was a failure out-of-the-box, there would probably be none. Then I asked the service manager of the small company that made my machine, and which has a thousand or so players in the field. He confided that he replaces between twenty and thirty laser-pickup assemblies per year. And the replacements, like the originals, are bought from Sony.

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