

Stereo Review

SEPTEMBER 1986 \$1.95

SPEAKER SPECIAL

HOW TO BUY LOUDSPEAKERS

ROOM ACOUSTICS

CROSSOVER BASICS

13 THRILLING NEW PRODUCTS

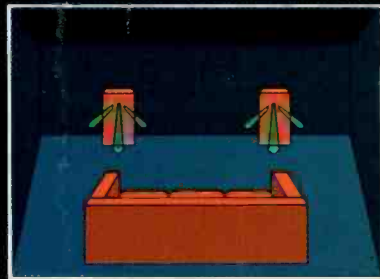
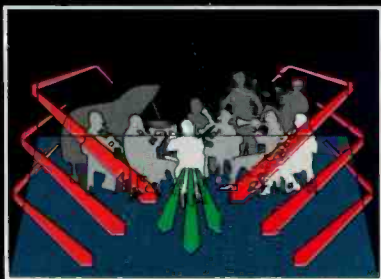
**FIRST TESTS:
YAMAHA DIGITAL SOUND PROCESSOR**

**ALSO TESTED:
JBL SPEAKER
SONY CD PLAYER
JVC TAPE DECK
...AND MORE**



MR DAVID BUCHANAN
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In the concert hall (above left), listeners hear a complex mixture of direct and reflected sounds, arriving from different directions and at different times. Bose Direct/Reflecting[®] speakers (center) are designed to reproduce music in much the same manner, allowing listeners to hear greater realism and impact. Conventional speakers (above right), on the other hand, reproduce primarily direct sound, causing listeners to miss many of the critical acoustic cues that make live music sound live.

system. The 901 system works by reflecting most of its sound, instead of aiming all the sound toward you like a conventional speaker. So, anything you listen to over a 901 system—from digital audio to hi-fi video—picks up a sense of concert hall realism, because the system reproduces the natural concert hall balance of direct and reflected sound. Best of all, the 901 system's ultra-high efficiency and *unlimited power handling* in home applications make it compatible with virtually any stereo system.

The New Bose 601™ Series III system.

The floor-standing 601 system makes much of the 901 system's legendary Direct/Reflecting[®] speaker performance available to a wide range of music lovers.

In the 601 system, careful engineering has been used to integrate a series of innovations into a furniture-quality cabinet that is comfortable with almost any room. High power handling capability and high efficiency allow the 601-III system to be easily driven to digital concert levels with a wide range of amplifiers. Direct/Reflecting[®] speaker design means that the 601 system, like the 901 system, brings a greater sense of realism to *anything* you play through it—making it an ideal cornerstone for any audio/video system.

The right speakers for *your* entire system.

The new Bose 601 Series III and the Bose 901 Series V speakers will allow you to get the most out of both your stereo system and your software investment—because they will allow you to hear all of the realism that a truly good audio and video system is capable of producing. Audition the Bose 901 and 601 Direct/Reflecting[®] systems at your Bose dealer and judge for yourself. Then, take the next step—and invite a legend home.

There is an entire line of Bose speakers available that incorporate much of the advanced technology developed for the 901 and 601 systems. For more information and an all-product brochure, write Bose Corporation, Dept. SR, 10 Speen Street, Framingham, MA 01701.

When you ask for more information, be sure to request a copy of Dr. Amar Bose's "Sound Recording and Reproduction." This paper describes the research effort behind the original Bose 901 system.

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CIRCLE NO. 13 ON READER SERVICE CARD

The Acoustic Matrix™ enclosure helps the 901 system control sound by precisely controlling air. Made up of 14 separate acoustic regions, it isolates the drivers and regulates internal air flow, resulting in increased bass and lower distortion.

The Bose 901 active equalizer uses low-distortion electronics to correct the system's total frequency response, allowing a compact system to produce full-frequency sound. Digital Dynamic Range[®] circuitry makes the entire system ideal for use with the best sources available.

BOSE
Better sound through research.



... the Bose® 901® Series V speaker. A system designed to *one standard*: Live music.

If you have ever heard music live, you can appreciate what is behind the Bose 901 and 601™ systems.

Live music is the complex interaction of direct and reflected sound. Most speakers, however, are not designed with this in mind, which is why they sound more like speakers instead of live music.

This was the conclusion reached years ago by a Massachusetts Institute of Technology research team led by Dr. Amar G. Bose. Through exhaustive research, his team discovered the secret of live music: that it is the precise *balance* of direct and reflected sound heard during a live performance that makes live music sound live. Finally, they designed a product that could put this discovery to work in the living room: the legendary Bose 901 system.

The Bose 901 Series V speaker: a system of audio innovations.

The introduction of the revolutionary Bose 901 system in 1968 redefined the phrase "high fidelity." For the first time, a speaker was capable of reproducing music with much of the impact, clarity and spaciousness of a live performance. The 901 system's concert hall sound and compact size made the speaker an instant success with both audio critics and buyers.

Today's 901 Series V system incorporates some 350 improvements over the original. The speaker's innovative audio technology turns your entire listening room into an essential part of your stereo



The Bose 901 system's Direct/Reflecting® speaker design turns your listening room into part of your stereo system. You'll hear *full stereo throughout the listening environment*—no matter where you sit or stand.



The 901 system's nine full-range HVC drivers are precisely arranged to re-create live music's natural balance of direct and reflected sound. Each driver is matched and tested by the Bose Syncom® II computer.

The Bose-built HVC driver is made out of some of the strongest advanced composite materials available. The heart of the driver is the Helical Voice Coil, which handles instantaneous peaks of up to 4,000 watts! Multiple HVC drivers give the 901 system *unlimited power handling* in home applications.

The speakers on this page look and sound different from any other. Because unlike ordinary designs, these speakers take their cues from the concert hall. The result is that they sound less like speakers and more like music.

The musical realism and impact that these speakers are capable of producing will surprise you when you first hear them. But the reasons for it are rooted in scientific research and common sense. Basically, the people responsible for these speakers didn't start off by building speakers. Rather, they first learned the secret of *live music*. Once they discovered it, they built it into a line of better-sounding speakers for you to own, listen to and enjoy.

The speakers below are the latest addition to that line. Chances are, their sheer musicality will surpass that of any company's top-of-the-line speaker that you have ever heard—with one important exception. And we make that one, too.

**Introducing the Bose® 601™ Series III Direct/Reflecting® speaker:
Designed to meet the standards set by an audio legend . . .**



by Christie Barter and
William Burton

NEW MARANTZ COMPANY

Saul Marantz, founder of Marantz Company, Inc., and John Curl, former designer for Mark Levinson, have created a new audio company called Lineage. Based in New York City, the company will make solid-state products, aimed at the high end of the audio market, to be sold by independent specialty dealers. The first products, a preamp and power amp priced below \$2,000 each, should be available this year. A CD player is slated to be the third product from the new company.



MORE COMPACT DISCS

Nimbus Records, the independent British company that was among the first to abandon LP's for a CD-only policy, has now set its sights on the American record buyer. The company has opened a New York office and will initially market some forty classical CD's in this country. Twenty-five to thirty new titles will be added each year. Nimbus owns two CD manufacturing plants in the west of England where it produces its own CD's and those of a number of other companies, including several American pop labels.

THE SOUND OF AMPS

Challenged to modify one of his power amplifiers so it would sound like a Conrad-Johnson tube amplifier, Robert Carver, president of Carver Corporation, came up with a design that has gone into production as the Model M-1.0t. Judged by a listening panel to sound identical to the Conrad-Johnson mono amplifiers (priced at \$6,000 per pair), the Carver amp delivers 201 watts per channel at a price of \$549.

BOOMTOWN KNIGHT

Bob Geldof, lead singer of the Boomtown Rats, who has raised millions of dollars for famine relief in Africa, has been made a Knight Commander of the Most Excellent Order of the British Empire. He is thus allowed to use the initials KBE after his name but cannot call himself Sir Bob since only British subjects can, in a true sense, be knighted. Geldof is Irish.

VHS AND 8MM VCR

Displayed as a prototype at the Chicago Summer Consumer Electronics Show, Samsung's "Translator" videocassette recorder—which has transports for both VHS and 8mm videotapes—could be shown to dealers for actual distribution at the next CES in Las Vegas next January. Chances that the deck will be marketed are only fifty-fifty, according to Samsung spokesman Richard Leister, because of opposition from the Motion Picture Association of America, which is concerned that the deck will be used to make copies of copyrighted movies. If it is marketed, the unit is expected to sell for under \$1,000.

VIDEO NOTES

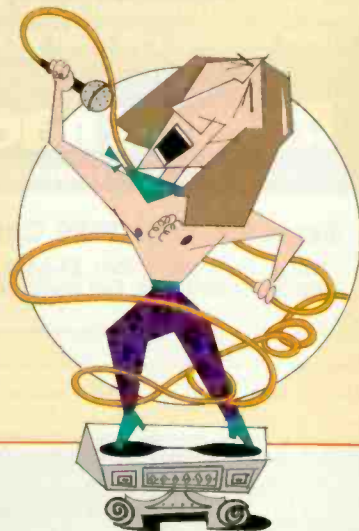
Elektra Records has just launched its own line of music videos with the Cure's "Staring at the Sea—The Images," a retrospective compilation paralleling their LP "Standing on the Beach—The Singles." Future Elektra videos will be devoted to other in-house acts like Dokken, Mötley Crue, and Howard Jones. . . . MGM Home Video has signed an agreement to employ the Macrovision anti-copying process on all of its upcoming videocassettes. Other companies currently using the process include CBS/Fox, MCA, and Thorn/EMI. . . . Sony Video Software has begun licensing and distributing music videos produced in the U.K. by Virgin Music Video. The first release includes videos by Orchestral Manoeuvres in the Dark, James Brown, Tina Turner, and Bryan Adams.

TECH NOTES

The United States and other Western nations have agreed on a proposal to extend the AM band from 1605 to 1705 kHz, allowing for more AM radio stations (perhaps an additional 300 in the U.S.) and a possibility of better sound on AM with better AM receiver standards. . . . According to the Electronic Industries Association, 1,800,000 CD players will be sold to dealers this year, compared with 13,200,000 VCR's. . . . Test broadcasts to demonstrate the potential of high-definition television (HDTV) are planned for Washington, D.C., this fall by the NAB and the Association of Maximum Service Telecasters. . . . A coupon redeemable for a free Sony audio cassette (with the purchase of two others) is enclosed in specially marked boxes of Clearasil.

CABLE NEWS

When the rock group Journey made their latest album, "Raised on Radio" (CBS), they used more than 4,000 feet of different kinds of Monster Cable to connect various parts of the recording equipment. Monster Cable gets a credit on the jacket for helping to achieve "state-of-the-art sound," and the group's manager, Herbie Herbert, says he thinks it is "the finest sounding commercial rock album ever produced." Within a month of its release "Raised on Radio" was in the top five on *Billboard* magazine's chart of best-selling albums.



TERRY ALLEN



Enter the World of Digital Technology Radio Shack's Command Performance Receiver

The Realistic® STA-780 receiver puts precision control and dynamic audio power at your fingertips. The digital-synthesized tuner features a search mode that lets you scan up and down the

FM and AM bands. The system stops at each station and locks it on-channel, automatically skipping over weaker stations. It also provides you with a feather-touch control bar for manual tuning and a computerized memory to store six FM and six AM stations for instant recall. Exact station frequencies are shown on the digital fluorescent display. The STA-780 boasts a full array of 27 controls including tape monitor, loudness and subsonic filter. And 21 LED function indicators keep you in complete command. The amplifier delivers the power to get the most from today's digital audio equipment. 45 watts per channel, minimum rms into 8 ohms from 20-20,000 Hz, with no more than 0.08% THD. You can connect a compact-disc player, TV-sound source, tape deck, turntable and two pairs of speaker systems. All this for just \$349.95. Come in for a test-listen.

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Stereo Review

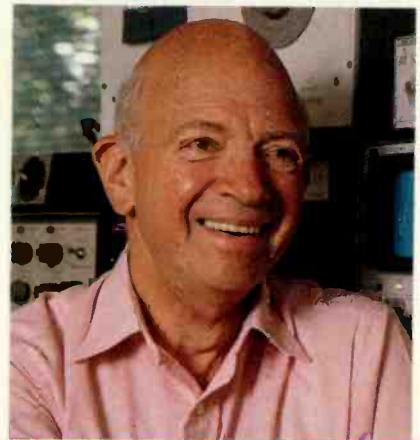
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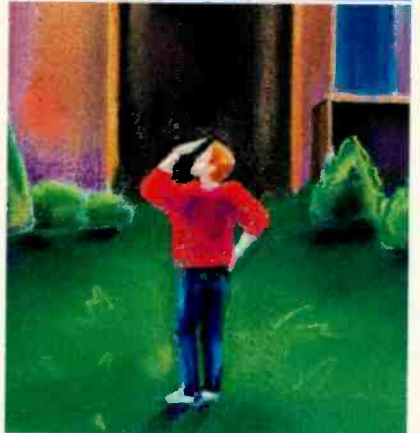
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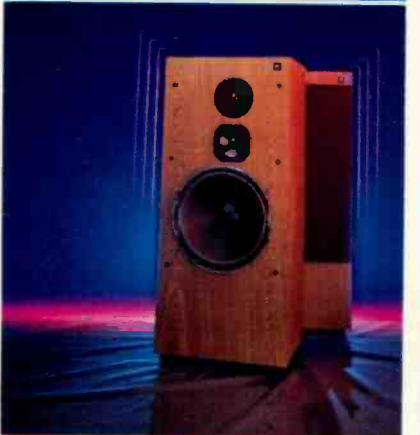
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The JBL L100T speaker system on this month's cover is the subject of a test report on page 35.

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COVER: DESIGN BY SUE LLEWELLYN, PHOTO JOOK LEUNG

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SPEAKING MY PIECE

by William Livingstone



With JBL's John Eargle (left) at Ford's audio labs in Dearborn, Michigan

Speakers and CES

AFTER this summer's Consumer Electronics Show in Chicago, Julian Hirsch commented that speaker designers continue to come up with new solutions to old problems. He said that after more than twenty-five years of testing audio products he is still learning new things about speakers.

John Eargle, senior director of product development and application at JBL, thinks improved measurement techniques are in part responsible for the generally higher quality in speakers from most manufacturers. Another contributing factor Eargle mentions is the great improvement in software, such as the compact disc. The speaker shown on this month's cover is from Eargle's company, and Hirsch's test report on it appears on page 35.

At CES, Akai gave audio journalists private demonstrations of its first made-in-America speaker, still a work in progress. Allison Acoustics showed a new speaker with an onboard user-adjustable sound stage which may be ready by the end of the year. Carver Corporation showed its first speakers ever, and they are included among the CES show stoppers on page 67.

Some of the fabulous imaging characteristics introduced during the last couple of years in top-of-the-line speakers from Acoustic Research, dbx, and Polk Audio are, I

am happy to say, now being made available in less expensive speakers from all three companies. The highest prices I noticed at CES were for a new line of powered speakers from Canton, which go up to \$12,000 a pair. Not officially at the show, Magnepan was in Chicago demonstrating its new planar speakers, which sounded wonderful and cost only \$2,000 a pair.

At the show I sensed a trend back toward separate electronic components. There were impressive receivers from such companies as NAD and ADS, but there were interesting power amplifiers and preamps from many other manufacturers such as Denon, Luxman, Onkyo, and Proton.

Another discernible trend was the cautious move toward brighter colors for electronic products, not just the mauve, avocado, and peach-colored cabinets that make many new TV sets look like washers and dryers from the color-coordinated American kitchens of the 1960's. Sony is using a brilliant yellow for its sports line of portable audio/video products, and Panasonic is showing portable systems in yellow, pink, and electric blue.

Pastel shades of aqua, lilac, pink, and baby blue, once thought of as feminine, have become stylish fashion colors in menswear, perhaps because of their association with the TV show *Miami Vice*. Those colors are used in dbx product literature and even on some Sony and Magnavox products. Kirksaeter, a high-end German speaker manufacturer, showed a new line with brilliantly lacquered cabinets in lemon yellow, emerald green, and Chinese red.

Adcom is making its new amplifier available not only in basic black but in white as well. Canton, which has successfully popularized white speakers, showed a dazzling white preamp designed for use with its new powered speakers.

As is usual in September, we are focusing this issue on speakers, but this month we are also celebrating Julian Hirsch's silver anniversary with STEREO REVIEW. Hirsch is interviewed by Michael Smolen on page 81. He began testing products for us in 1961, but as if to show how up to date he is, he's wearing a fashionable pink shirt. □

Stereo Review

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"The Genius of Matthew Polk Brings You A New Generation of Extraordinary Sounding SDAs"

"Mindboggling...Astounding...Flabbergasting"

High Fidelity Magazine

The result is always better than would be achieved by conventional speakers." *Stereo Review Magazine*

Polk's critically acclaimed, Audio Video Grand Prix Award winning SDA technology is the most important fundamental advance in loudspeaker technology since stereo itself. Listeners are amazed when they hear the huge, lifelike, three-dimensional sonic image produced by Polk's SDA speakers. The nation's top audio experts agree that Polk SDA loudspeakers always sound better than conventional loudspeakers. Stereo Review said, "Spectacular... the result is always better than would be achieved by conventional speakers." High Fidelity said, "Astounding... We have yet to hear any stereo program that doesn't benefit." Now the dramatic audible benefits of Polk's exclusive TRUE STEREO SDA technology are available in 5 uniquely superb loudspeaker systems, the SDA SRS, SDA SRS 2, SDA-1A, SDA-2A, and the SDA CRS +.

"They truly represent a breakthrough"
Rolling Stone Magazine

Without exaggeration, the design principals embodied in the SDAs make them the world's first true stereo speakers. When the big switch was made from mono to stereo, the basic concept of speaker design was never modified to take into account the fundamental difference between a mono and stereo signal.

What is the difference between a mono and stereo speaker? The basic concept of mono is that you have one signal (and speaker) meant to be heard by both ears at once. However, and basic concept of stereo is that a much more lifelike three-dimensional sound is achieved by having 2 different signals, each played back through a separate speaker and each meant to be heard by only one ear apiece (L or R). So quite simply, a mono loudspeaker is designed to be heard by two ears at once while true stereo loudspeakers should each be heard by only one ear apiece (like headphones). The revolutionary Polk SDAs are the first TRUE STEREO speakers engineered to accomplish this and fully realize the astonishingly lifelike three-dimensional imaging capabilities of stereophonic sound.

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Polk SDA technology solves one of the greatest problems in stereo reproduction. When each ear hears both speakers and signals, as occurs when you use conventional (Mono) speakers to listen in stereo, full stereo separation is lost. The undesirable signal reaching each ear from the "wrong" speaker is a form of acoustic distortion called interaural crosstalk, which confuses your hearing.

The Polk SDA systems eliminate interaural crosstalk distortion and maintain full, True Stereo separation, by incorporating two

SDA Signature Reference System (SRS) - \$1395.00 ea. *AudioVideo Grand Prix Winner*

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SDA 1A - \$695.00 ea.

AudioVideo Grand Prix Winner
A beautifully styled, full size floor-standing system combining Polk's state-of-the-art components with exclusive TRUE STEREO technology for extraordinarily lifelike sound. It is now available in vinyl at a new lower price. High Fidelity said "the Polk SDA 1 Loudspeaker provides startling evidence of the audio industry's essential creative vitality."

New SDA 2A - \$499.00 ea.

AudioVideo Grand Prix Winner
The new SDA 2A is a full size floor standing system which incorporates many of the latest refinements in SDA technology developed for the SRS models. It represents an extraordinary value which combines spectacular SDA performance with a remarkably affordable price. High Fidelity said listening to the SDA 2 is "an amazing experience."

New SDA CRS + - \$395.00 ea.

AudioVideo Grand Prix Winner
The new SDA CRS + is the world's best sounding bookshelf loudspeaker and now incorporates many of the latest refinements in SDA technology developed for the SRS models. It combines the extraordinarily lifelike three-dimensional sonic performance of Polk's patented SDA technology with a handsome enclosure (stand or shelf mountable) of attractively modest proportions. Stereo Review said the CRS is "an impressive achievement".

completely separate sets of drivers (stereo and dimensional) into each speaker cabinet. The stereo drivers radiate the normal stereo signal, while the dimensional drivers radiate a difference signal that acoustically and effectively cancels the interaural crosstalk distortion and thereby restores the stereo separation and imaging lost when you listen to normal "mono" speakers. The sonic benefits are remarkable.

"Breathtaking...a new world of hi-fi listening"

Stereo Buyers Guide

"Mindboggling...astounding...flabbergasting"
High Fidelity Magazine

Words alone cannot fully describe how much more lifelike SDA TRUE STEREO reproduction is. Reviewers, critical listeners and novices alike are overwhelmed by the magnitude of the sonic improvement achieved by Polk's Stereo/Dimensional technology. You will hear a huge sound stage which extends beyond the speakers and beyond the walls of your listening room itself. The lifelike ambience revealed by the SDAs transports you to the acoustic environment of the original sonic event. Every instrument, vocalist and sound becomes tangible, distinct, alive and firmly placed in its own natural spatial position. You will hear instruments, ambience and subtle musical nuances (normally masked by conventional speakers), revealed for your enjoyment by the SDAs. This benefit is accurately described by Julian Hirsch in Stereo Review, "...the sense of discovery experienced when playing an old favorite stereo record and hearing, quite literally, a new dimension in the sound is a most attractive bonus..." Records, CD's, tapes, video and FM all benefit equally as dramatically.

"You owe it to yourself to audition them"
High Fidelity Magazine

SDAs allow you to experience the spine tingling excitement, majesty and pleasure of live music in your own home. You must hear the remarkable sonic benefits of SDA technology for yourself. You too will agree with Stereo Review's dramatic conclusion: "the result is always better than would be achieved by conventional speakers...it does indeed add a new dimension to reproduced sound."

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Where to buy Polk Speakers? For your nearest dealer; see page 133.

CIRCLE NO. 37 ON READER SERVICE CARD

Is Open-Reel Passé?

In your answer to George Eaglin's letter in the June issue, you imply that reel-to-reel [open-reel] tape recording is passé. I have been recording classical music with this method since 1945, and at present my collection numbers well over two thousand composers. In the past forty years I have gone through about twenty recorders, and I would greatly appreciate your thinking on whether I will be able to procure another reel-to-reel machine when mine wears out in a few more years.

R. H. COBB
Osprey, FL

I disagree with your assessment of reel-to-reel recording as "outdated" (June "Letters"). Many of my music-conscious friends, dissatisfied with the limitations of the cassette medium, currently own or are looking to purchase reel-to-reel machines. First, every cassette player runs at a slightly different speed. Second, editing is impossible with any other format except prohibitively expensive digital reel-to-reel units. Third, the quality is superior.

I defy you to find one recording studio in the world that doesn't utilize the reel-to-reel format. STEREO REVIEW does the art of musical reproduction a disservice by discounting the viability of reel-to-reel.

BRIAN GRAIFMAN
San Francisco, CA

You don't tell Mr. George Eaglin *why* reel-to-reel recording is passé. For my money, reel-to-reel ceased being worthwhile with the appearance on the market of the superb Sony PCM-F1 digital encoder/decoder. Along with a portable video recorder to absorb the digital data stream, this processor costs about double the price of a good, basic reel-to-reel machine—a Revox B77, say. But it is more portable and, along with the VCR, it can record a full-length opera on a couple of motorcycle batteries with fidelity superior even to 15-ips reel-to-reel at about one-sixth the cost in tape. A further advantage is that once you've set your levels properly at a concert or opera, there is practically no need to monitor gain and watch out for overload, since the dynamic range of digital recording is little short of miraculous.

And, of course, you don't have to change tape during the course of a normal concert.

In spite of all this, I gather that the PCM-F1 was not a roaring commercial success. Hi-fi fans continue to look for reel-to-reel recorders or often buy fancy and extraordinarily expensive audio cassette recorders with metal-tape capabilities and hot and cold running water. A PCM processor with a VCR will do anything your lushest Nakamichi cassette recorder will do, and very much better. Cheaper too, as the price of a three-hour VHS tape beats that of a couple of metal C-90's.

JOHN WITHEY
Washington, CT

For a large majority of our readers the quality of today's cassette decks is more than adequate. For those few who want to edit tapes, reel-to-reel machines are still made by such companies as Akai, Revox, Tandberg, Teac, Technics, and Uher. Mr. Cobb seems to wear out an open-reel machine every two years. He'll probably be able to get a new one in 1988. We wouldn't want to bet on 1990.



Sony just extended the range of

Stereo-Video Review

I must take exception to Mr. John Frost's letter in the July issue. Changing the name STEREO REVIEW to *Stereo-Video Review* is absolutely out of the question if you want me to continue subscribing. I am one of your many "belligerent readers," and I love your magazine. I beg you to keep the best stereo magazine around the best *stereo* magazine around.

ADAM GOLDBERG
Laurel, MD

Champagne Taste

Having purchased a Luxman R-404 AM/FM stereo receiver a month before the July issue of STEREO REVIEW arrived, I loved each and every word in the test report on the Luxman R-406. Let the owners of other receivers argue who's got the *second*-best-looking receiver. One has to see the Luxman to appreciate its champagne-tinted front panel and large gold-tinted volume knob, offset by a contrasting black-velvet-like body. And the beauty of it is that Luxman has an identically styled

CD player and other components to match the R-406 receiver's good looks.

Of the three methods of volume control—slide, pushbutton, and knob—I prefer the knob. There's nothing like turning up a knob when you hear the coda of a Beethoven or Brahms symphony or Mahler's First Symphony approaching. Sherwood has also gone back to knob controls on its receivers.

JOHN KALUS
Cleveland, OH

Thinking Digitally

There appears to be some contention that digital recording and the compact disc format are justified by the fact that the brain functions "digitally" and that the ear acts merely as an audio-to-digital (A/D) converter (a comment to this effect was quoted in July's "Japanese Audio Technology"). A fault lies in this logic, however. If the ear works as an A/D converter, then we should listen to "analog sound," not "digital sound."

One realizes the absurdity in both lines of reasoning. (What makes a sound more digital or more analog?) The brain is not aided by the digital

medium just because the brain happens to work "digitally." Recorded music, whether in analog or digital form, must be in analog form when leaving the speakers or headphones.

I am not criticizing the digital formats, only pointing out that a new technology should be accepted on the basis of its merits, not because of illogical rationalization.

JONAS CHO
Monterey Park, CA

Audiophile Listening

You really saved the best for last in the July issue. In one page, "The High End," Ralph Hodges more clearly and accurately defined an audiophile than I have ever heard it done—or could have done myself. I can think of only one thing he left out, which is that when an audiophile finds a piece of music that produces the emotions Mr. Hodges was speaking about, he considers that piece of music to be a masterpiece of art. Inasmuch as this is true, I am infuriated with Warner Bros. for destroying a masterpiece. The CD release of Jethro Tull's "Aqualung" has more hiss than my



your music.

Our new UX tapes deliver higher highs, lower lows and wider dynamic range.

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CIRCLE NO. 53 ON READER SERVICE CARD

**Lots of new companies make speakers for cars.
AR has made speakers since this car was new.**



In 1954, the Dodgers were in Brooklyn, Branco was on the waterfront, and Elvis was in Sun Studios. In September 1954, a classic two-seater called the Ford Thunderbird went into production.

That same year, Acoustic Research invented the Acoustic Suspension principle and used it to create another classic: the first high fidelity bookshelf speaker. Soon, AR products became the most revered, most sought-after, most imitated speakers in history.



Now, Acoustic Research puts its years of loudspeaker experience on the road. With the sophisticated new GCS Speakers. Most car speakers aim their tweeters at your rear window, not at your ears. AR's GCS-100 system has separate component woofers, midranges and tweeters. So you can mount the tweeters up front, where you can hear them. And the GCS-300, a classic 6 x 9, tilts the tweeter towards the front. While many car speakers have no crossover at all, these AR speakers have true electronic crossovers for minimum IM distortion. And while others use flimsy paper cones, AR uses ultra-rigid polypropylene.

Ultimately making car speakers is easy. The hard part is making speakers sound good. And that's precisely what AR has been doing for 32 years.



AR
ACOUSTIC
RESEARCH

We speak from experience.

CIRCLE NO. 18 ON READER SERVICE CARD

fourteen-year-old LP. They must have cut the CD from a cassette! Even more deplorable is that the ending of the last selection was cut off. I sincerely hope that the idiot who butchered this masterpiece is forced to listen to Quiet Riot till he turns purple.

JOHN LARRISON
Austin, TX

"Bachbusters"

I am a lover of classical music, and about 85 percent of my 130-plus CD's are classical, with the remainder being just about everything except rock and punk. Bach and Tchaikovsky share the honors for the most CD's. My favorite Bach CD is Don Dorsey's "Bachbusters." It is a new advance in the art of music. Synthesizers can now take their place among the serious instruments such as the violin, the drum, the horn, and others.

Stoddard Lincoln's short review of "Bachbusters" in the July issue refused even to mention the title of the CD and exhibited an extreme amount of prejudice and a lack of honesty. This is not just a point of disagreement. I believe

this man was downright hostile to Bach, Don Dorsey, the average reader of STEREO REVIEW, classical-music lovers, and myself specifically. I beg for a retraction.

JOEL LICHTENWALNER
Anaheim, CA

I agree completely with Stoddard Lincoln's July review of "Bachbusters." Don Dorsey wasted the technology he had before him by selecting all the wrong synthesized sounds. I don't see how anyone could make Bach sound much worse. Unfortunately, this album is going to seduce many people, like myself, who are longing for another "Switched-On Bach." I wish I hadn't spent \$15 for the "Bachbusters" CD.

KEN PAULUS
Massillon, OH

Design Acoustics

It's always pleasant to have one's products shown in STEREO REVIEW, even when the context is not exactly correct, so please accept our *mildly* qualified thanks for including our Design Acoustics PS-30 speaker system in

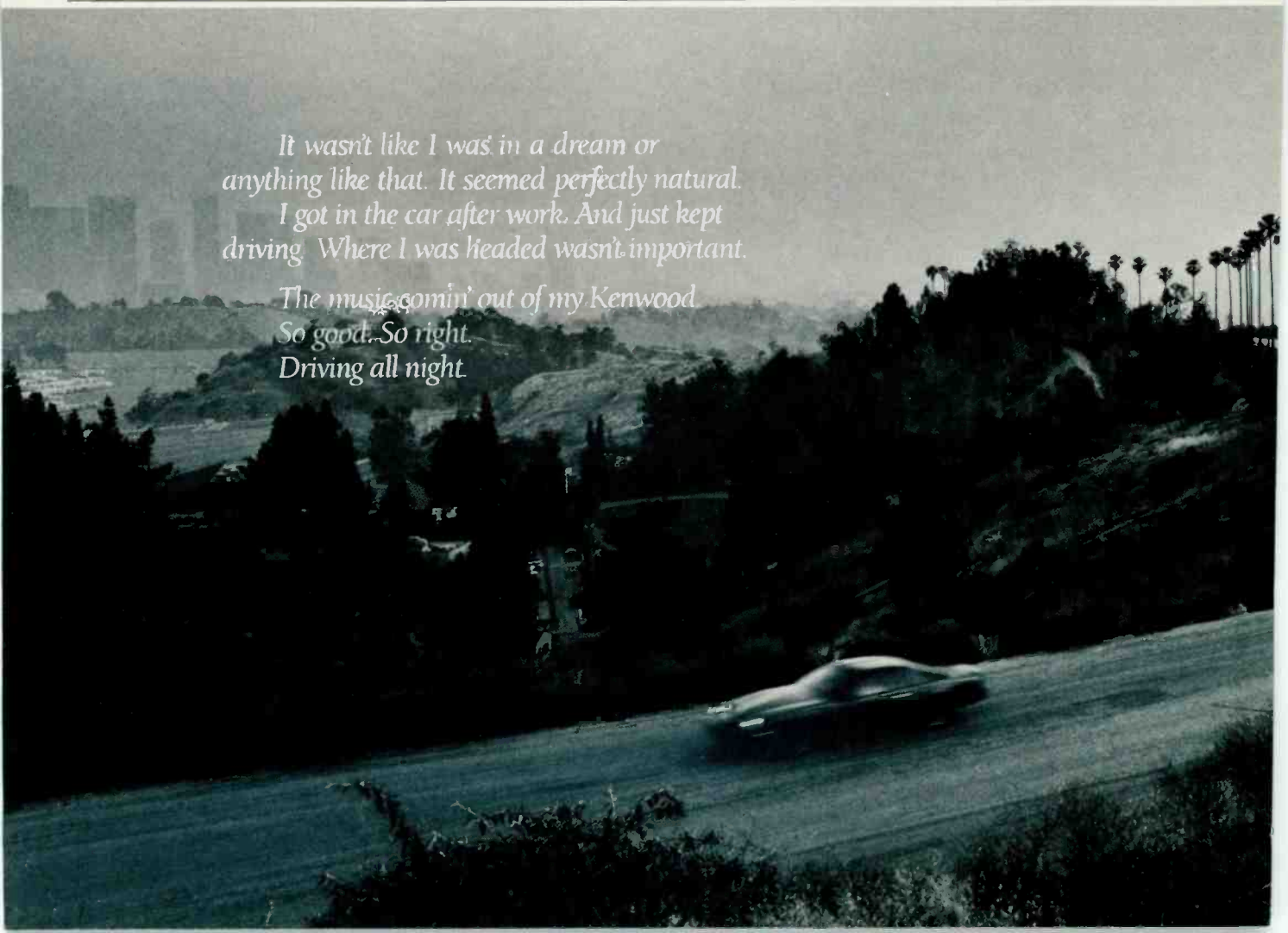
your July wrap-up of "Japanese" audio products. The slight error was understandable since most Audio-Technica products are, indeed, made in Japan. A notable exception, ironically, has been our Design Acoustics speakers. We purchased the Design Acoustics company from its founder, in California, several years ago, and have since moved the manufacturing and engineering operations to Ohio, where they remain.

Anyway, the color picture was well reproduced, and its inclusion cannot hurt, though it may shake up a few of our dealers who have been assured that our speakers are of American origin.

DON KIRKENDALL
Director, Marketing Communications
Audio-Technica U.S., Inc.
Stow, OH

Salvaging a Damaged CD

While listening to my favorite CD the other night, I noticed with some alarm that the player was skipping on one particular cut. I removed the disc for examination and discovered a small defect in the protective plastic surface that was apparently causing the laser to misread



*It wasn't like I was in a dream or
anything like that. It seemed perfectly natural.
I got in the car after work. And just kept
driving. Where I was headed wasn't important.*

*The music comin' out of my Kenwood
So good. So right.
Driving all night.*

and skip. Since I didn't have my receipt and lived too far away from where I bought the CD to consider exchanging it anyway, I decided to try repairing it myself.

After some unsuccessful attempts at scraping the offending glitch off the surface, I hit upon the idea of using a mild liquid abrasive and some elbow grease. I applied a tiny bit of the rubbing compound used on car paint, and after twenty minutes of rubbing with a clean cloth I had removed the glitch. I cleaned and polished the CD, then tried it out. It played perfectly!

I wouldn't recommend doing this unless all options for exchange have been explored, but if you're desperate . . .

THOM PINTELLO
San Juan Bautista, CA

R-&B Blues

Why is it that the category "r-&b" is so widely used for music by black performers? I ask this because I see reviews and comments on such artists as Morris Day and Prince routinely placed in the category of "r-&b" music. I find Prince nasal, affected, and generally obnox-

ious, and he couldn't perform anything resembling rhythm-and-blues if Albert King came up and bit him. I don't know what category his sort of music should be put in—unless the term "insubstantial" should become popular nomenclature—but "r-&b" it ain't!

DAVID J. SECORD, JR.
Irving, TX

Ban Canoe Stereo

It was inevitable. First came the trail bikes, then the dune buggies, followed by the snowmobiles tearing up the earth and filling the air with fumes and noise. Now we have Glenn Trembl's "Guide to Hi-Fi Stereo Sound in a Canoe" in your July "Letters" columns. Our Canadian friend describes the "extreme quietness of a lake environment" (isn't that what we seek?) and then suggests the equipment to buy to shatter that same quietness. "Lots of amplifier power is as important as your paddle," says Trembl. One can imagine the idiotic gleam in his eyes and the drool trickling from his lips as he cranks up his deep-cycle, 12-volt battery. Goodbye, loons. Goodbye, heron. Goodbye, moose. Goodbye, sanity.

If acid rain is killing off half the northern lakes, Trembl has provided the formula for killing off the other half. Hasn't this chap ever heard of the Walkman?

JAMES MORSE
Latham, NY

Willem Mengelberg

On page 100 of the July issue, David Hall incorrectly referred to the world-famous conductor Willem Mengelberg, to whom Richard Strauss dedicated *Ein Heldenleben*, as Wilhelm Mengelberg. I am sure that Mr. Hall, a most prestigious, renowned, and excellent music critic, would not have reviewed music composed by Riccardo Wagner or conducted by Richard Muti or Arthur Toscanini.

WILLIAM GUNTHER
Bronx, NY

We regret the error, which was introduced when Mr. Hall's original reference using only Maestro Mengelberg's last name was editorially amplified. We aim for zero distortion in editing but do not always achieve it.

The opportunity to indulge in the enriching moments of life should never be taken away. That's why Kenwood invented the theft-proof KRC-838—a simple flip of a lever releases the head unit so you can keep it with you. Without losing the preset memory.

Its superior audio features include a high-power amplifier, separate bass and treble controls, 24 station presets, auto-reverse, a 4-channel bi-azimuth tape head for flawless tracking, Tape Scan, Dolby* B and C, and a Tuner Call that plays the radio during fast forward or rewind.

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For the Kenwood dealer nearest you, call 1-800-CAR SOUND.

*Dolby and the double-D symbol are trademarks of Dolby Laboratories Corporation.

25th
Anniversary



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STEREO FOR YOUR CAR

CIRCLE NO. 29 ON READER SERVICE CARD

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Cerwin-Vega's new Select Edition Series.

Sonic realism that creates a new dimension.

These stunning speakers give you high-tech outside, and *inside*—where it counts most. We've combined exacting engineering standards with superior Innovation to deliver defined, dimensional performance. All six models offer expertly matched componentry for clear linear response and electrifying depth.

Advances in consumer electronics demand progressive loudspeakers. With its unsurpassed efficiency (as high as 102dB 1W @ 1M) and power handling (up to 405 watts continuous), the SE Series delivers incomparable dynamic range (exceeding 92dB). Even

at extraordinary output levels, reproduction remains remarkably defined and distortion free.

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CIRCLE NO. 64 ON READER SERVICE CARD

NEW PRODUCTS



Pioneer

The wireless remote control for Pioneer's Elite Series C-90 audio/video control amplifier can select the input source and turn the motorized volume knob as well as controlling other compatible Pioneer components. Audio inputs are provided for two tape decks, a tuner, a turntable, and a CD player. To minimize distortion, the C-90 has separate power supplies for each audio channel and for the video circuits. The C-90 has five video inputs, three video outputs, and a video enhancer to improve detail, sharpness, and noise reduction. One video or audio source can be monitored while another is being recorded. The unit measures 21 $\frac{1}{16}$ inches wide, 8 $\frac{7}{8}$ inches high, and 18 $\frac{7}{8}$ inches deep. The side panels are covered in rosewood-grain vinyl. Price: \$799.95. Pioneer, Dept. SR, P.O. Box 1720, Long Beach, CA 90801.

Circle 120 on reader service card

dbx

Circuits in the dbx 3BX-DS (shown) and 1BX-DS signal processors, including the dbx OverEasy compression circuit, control dynamic range, restore musical impact, and adjust the width and spaciousness of the sound stage. Dynamic range can be increased or decreased by as much as 50 percent to simulate live music or to make recordings with more consistent volume levels for automotive or background listening. The Impact Recovery circuit is designed to restore the power of transients



that are sometimes softened in processing and manufacturing recordings.

The three-band 3BX-DS has three rows of LED's to display expansion or compression of the high, middle, and low frequencies. Three other rows of LED's show the effects of the Impact

Recovery circuits in the same frequency bands. The one-band 1BX-DS has a single row of LED's for each display function. Prices: 3BX-DS, \$499; 1BX-DS, \$279. dbx, Inc., Dept. SR, P.O. Box 100C, Newton, MA 02195.

Circle 121 on reader service card



Sonographe

The Sonographe SD-1 CD player has a single four-part control for its play, pause, forward-scan, and reverse-scan functions. Other buttons allow skipping to the beginning or end of a track, programming a series of tracks, reviewing the program, displaying time or track information, and repeating a track, program, or the entire disc. There is a front-panel headphone jack.

The SD-1 uses four-times oversampling and digital filtering. The final active filter is a discrete FET circuit coupled by a polypropylene capacitor to the final output. To eliminate phase shift, each channel has its own digital-to-analog converter. Price: \$695. Conrad-Johnson Design, Dept. SR, 1474 Pathfinder Lane, McLean, VA 22101.

Circle 122 on reader service card

NEW PRODUCTS

Sharp

Sharp's VC-H65U videocassette recorder has VHS Hi-Fi capabilities for high-quality sound and HQ circuits that produce a higher white-clip level for enhanced picture quality. It includes an MTS decoder for programs broadcast in stereo or with a separate audio program. A double comb filter is used to reduce cross-color video noise. The VCR can record simulcasts by recording the video signal from its tuner section and the audio signal from an FM tuner. Other features include a 110-channel cable-compatible tuner, automatic playback and repeat, a fourteen-day, six-event daily or weekly programmable timer, and automatic program search. The VC-H65U includes a twenty-three-function infrared remote control with a numerical keypad for instant channel selection. Price: \$819.95. Sharp Electronics, Dept. SR, Sharp Plaza, Mahwah, NJ 07430.

Circle 123 on reader service card



Shure

The Shure Ultra D6000 CD player provides for wireless remote control of

volume, programming, forward and backward track skip and scan, stop, pause, and repeat functions. The player uses a three-beam laser, dual digital-to-

analog converters, and a digital filter with more than 80 dB of attenuation. Analog filters attenuate frequencies above 30,000 Hz. Minimum laser life is said to be 8,000 hours, and the player comes with a five-year laser-replacement warranty. Average track-access time is 0 to 3 seconds. Frequency response is given as 5 to 20,000 Hz ± 0.25 dB. Dynamic range and signal-to-noise ratio are rated as 102 dB, harmonic distortion as 0.005 percent at 1,000 and 20,000 Hz. Price: \$649. Shure, Dept. SR, 222 Hartrey Ave., Evanston, IL 60204.

Circle 124 on reader service card

Sony

The SL-HFT7 SuperBeta "Movie Theater" videocassette recorder from Sony has a 20-watt-per-channel stereo amplifier so that the unit can be connected directly to optional speakers. Sound-enhancement circuits simulate theater and concert-hall acoustics. The circuitry can also synthesize stereo sound from mono sources. In addition to recording and playing Beta Hi-Fi soundtracks, the SL-HFT7 includes a video tuner with an MTS decoder for stereo broadcasts. The SuperBeta circuits are said to produce pictures that are 20 percent sharper than those from a standard Betamax VCR.

Recording and playback functions include high-speed picture search, slow



motion, pause, and freeze-frame. Other features include a ten-key direct-access wireless remote control, a synchro-edit switch to minimize loss in picture definition when editing, a linear time

counter, 148-channel express tuning, and a seven-day, six-event timer. Price: \$699. Sony, Dept. SR, Sony Drive, Park Ridge, NJ 07656.

Circle 125 on reader service card

WHICH TO BUY?



Find out in Stereo Review.

Subscribing to *Stereo Review* makes sense. Whether you're shopping for your first stereo system, upgrading your present one, looking for maintenance tips or trying to sort through the hundreds of new recordings released every month, *Stereo Review* has answers you can rely on.

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If you already have a terrific sound system, *Stereo Review* can help you care for it and upgrade it. With hints on getting four-channel sound from your stereo discs... how to care for your tape deck's heads... how to handle records to preserve them... and much more.

Stereo Review also helps you select the music to play over your sound system. We cover every category of recording on disc or tape, to help you steer away from uninspired performances or mediocre recordings.

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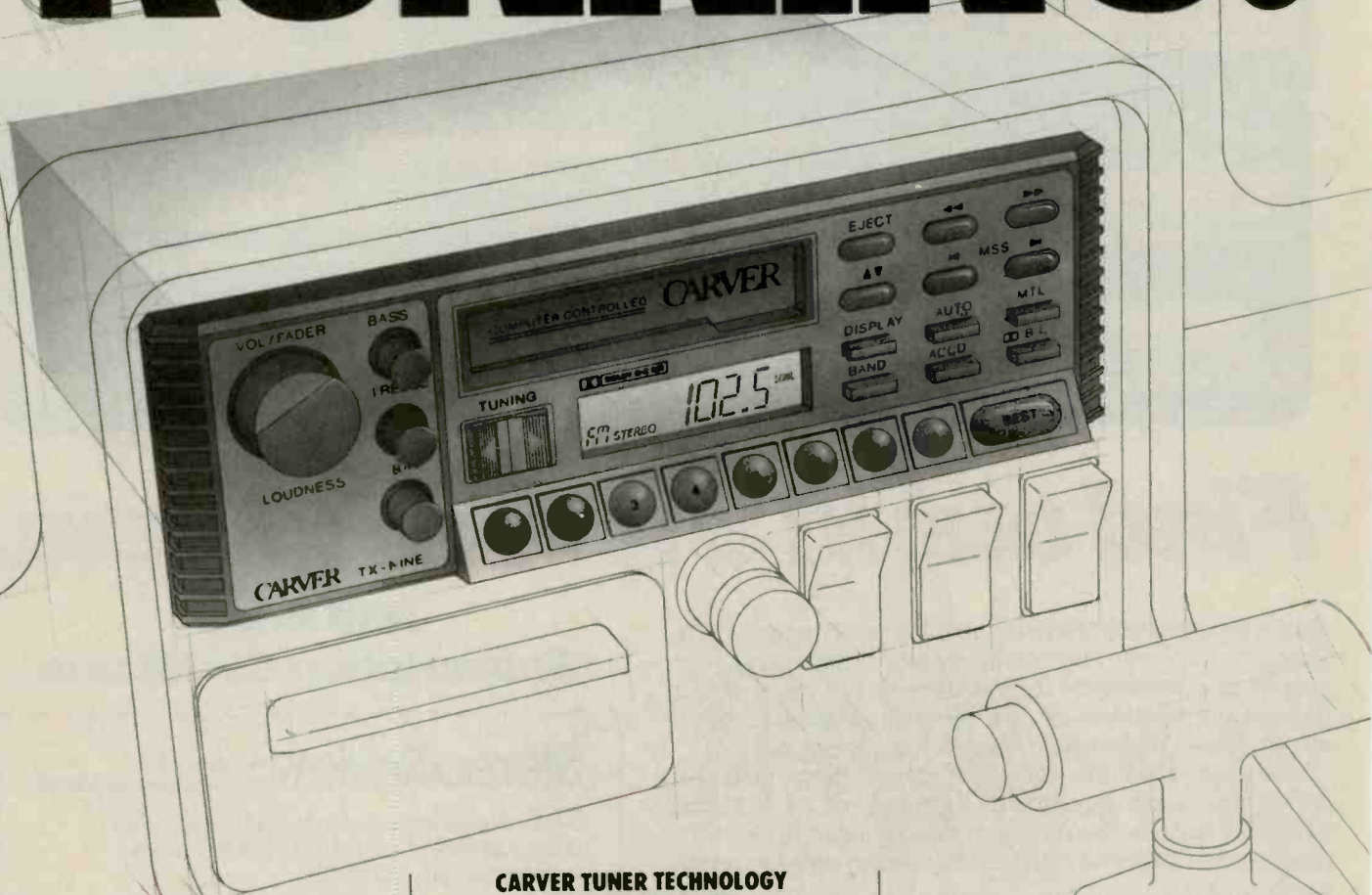
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FROM CARVER, NATURALLY.**

The new TX-Seven and TX-Nine auto-reverse AM/FM tuner/cassette audiophile decks represent yet another example of Carver's ability to solve previously insoluble audio problems and deliver you more musical enjoyment.

**CARVER TUNER TECHNOLOGY
TAKES TO THE ROAD.**

Each deck employs the same Asymmetrical Charge-Coupled FM Detection circuitry as Carver's revolutionary TX-11a home tuner, along with an ingenious automatic computer logic-controlled antenna switching system that further vanquishes multipath distortion.

In point of fact, no other autosound tuner/cassette decks in the world — regardless of price — even begin to approach the TX-Seven and TX-Nine's ability to maintain a hiss-free,

glitch-free, interference-free FM listening environment in your car.

Both also possess a multitude of other useful, state-of-the-art features which will recommend them to the most discriminating autosound audiophile.

COLLIDING WITH MULTIPATH DISTORTION.

By its very definition as a moving reception point, a car's FM tuner constantly falls prey to signal reflections from hills, skyscrapers, bridges and even other vehicles. These extra phase modulating signals trick conventional tuners into producing audible sounds we call multipath.

Startling outbursts of clicks, pops, "picket fencing" and other rude and indescribable sounds.

The trouble is, by its very nature, multipath distortion cannot be cured by conventional circuit "improvements." In fact, the better an autosound tuner is, the more faithfully it is deceived into converting phase modulation into ghastly-sounding interruptions in your favorite station.

COMPUTER LOGIC-CONTROLLED DIVERSITY ANTENNA SWITCHING DRIVES AROUND MULTIPATH.

One way to get temporary relief from interference at home is to move the antenna around slightly. That is in effect what the Carver TX-Seven and TX-Nine do with sophisticated circuitry in your car. Instead of physically moving one antenna, they turn your rear defroster into a second *separate antenna*, 180 degrees out of phase with the first. When multipath occurs, a special smart circuit automatically switches (at the speed of light) to the other antenna, automatically correcting phase and eliminating the multipath before you ever hear it. In serious cases, the circuit actually uses both antenna inputs at once, deriving a signal through sum and difference principles.

ASYMMETRICAL CHARGE-COUPLED FM DETECTION CIRCUITRY BRINGS IT ON HOME.

What little multipath distortion gets through the TX-Seven and TX-Nine's unique smart antenna system runs headlong into the remarkable tuner innovation *High Fidelity Magazine* described as "distinguished (by) its ability to pull clean, noise-free sound out of weak or multipath-ridden signals."

It specially treats the critical, multipath-prone left-minus-right (L-R) signal with a Charge-Coupled circuit that detects "dirty mirror image" signals and cancels them before they can reach your ears. Then the Leading Edge Detector circuit processes the final 5% of the L-R and interleaves it with the tuner's receiver matrix.

Alone, without antenna diversity switching, the TX-Seven and TX-Nine's Asymmetrical Charge-Coupled FM Detection Circuit

delivers a *net noise and distortion reduction of 92.9%*. Together, they set a new standard for clear, clean FM autosound reproduction.

THE MULTIPATH MARATHON: REAL WORLD CONFIRMATION IN THE MISTS OF THE NORTHWEST.

Bob Carver is both a theorist and a practical inventor. Circuits that work on paper get exhaustively tested in the field before release.

So he assigned a hapless engineer to map out the ultimate multipath-ridden route for confirmation of the TX-Seven and TX-Nine's special circuitry. With mountains, hills, huge evergreen trees, skyscrapers, large steel bridges, good robust traffic jams and a few assorted six-story-tall Boeing hangars, it didn't take long to map out a 6-mile course that could regularly deliver at least *287 separate multipath occurrences*.

Engaging the Asymmetrical Charge-Coupled FM Detection circuit and automatic antenna switching reduced occurrences to an average of *two* during the same 6-mile course while listening to the same stations!

Although results may vary in your locale, the same 90+% reduction in multipath has been confirmed in other widely diverse portions of the U.S.: The TX-Seven and TX-Nine work, and work well.

OTHER REMARKABLE TUNING FEATURES, TOO.

First, the TX-Seven and TX-Nine also receive Long Wave and Short Wave stations. And of course, both tuner/cassette decks have plenty of random presets... you can tune any fifteen AM, FM, SW or LW stations quickly for instant recall. Plus auto-scan and manual tuning.

But they also have a system that makes setting up all fifteen presets virtually instantaneous. Just press the button marked BEST and the tuner's logic circuitry will *automatically select* the fifteen cleanest, strongest signals and lock them in on the presets!

And that's *in addition* to your fifteen individual random presets.

As with all Carver products, the TX-Seven and TX-Nine do not sacrifice ease of use for useless, complicated frills. Instead, they answer every possible need without resorting to elf-sized buttons or glitzy flashing light displays.

Their metal-compatible, Dolby® NR, auto-reverse cassette sections rival any in the world. Both the TX-Seven and TX-Nine have separate bass, treble, balance and loudness

and four-way fader controls and a full-function LCD display with night illumination.

All operations are signaled with a gentle "beep" that keeps your eyes on the road, not on the compact, ergonomically-styled deck.

There's even a security code system that renders the TX-Seven or TX-Nine inoperable to anyone but you (and a window sticker to impart this discouraging information to others).

Or, if you prefer, use the quick removal system that slips out your TX-Seven or TX-Nine in seconds for storage in trunk or house.

THE BEGINNING OF THE PERFECT AUTOSOUND LISTENING ENVIRONMENT.

Out of the hundreds of tuner/cassette models currently available, only the TX-Seven and TX-Nine deliver home-stereo quality FM in your car. They achieve it with unique technology. And they are built to outlast your car, no matter what kind of climate you live in.

Coupled with a clean amplifier, such as The Carver M-240 Car Amplifier and state-of-the-art speakers, your ability to transform your car into a concert hall is almost unlimited.

We urge you to audition the TX-Seven and TX-Nine at your Carver dealer soon. They can put you in the driver's seat of a unique, interference-free musical experience.



THE TX-SEVEN AND TX-NINE

TUNER: ♦ Asymmetrical Charge-Coupled FM Stereo Detector ♦ Automatic Computer-Controlled Diversity Antenna Switching ♦ AM, FM, Long Wave and Short Wave Bands ♦ 15 Random Presets ♦ BEST Circuit for Auto-Selection of 15 Strongest Stations (in addition to 15 individual presets) ♦ Preset Frequency Auto-search ♦ Auto-scan Tuning ♦ Manual Tuning ♦ LCD Frequency Read-out.
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SPECIFICATIONS: ♦ Tuner S/N, 76dB ♦ S/N-65dB with Dolby B NR, 70dB with Dolby C NR ♦ Tape Frequency Response 20 Hz-15 kHz ♦ Dimensions, 180mm W x 51mm H x 160mm D (DIN mount)

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NEW PRODUCTS

ADC

Advanced error-correction circuits are said to enable ADC's Model 16/2R CD player to play right through scuffed, scratched, and dirty CD's with fewer audible effects than other players. The circuits also make the metal-chassis player more resistant to impact. Sixteen tracks can be programmed into memory for play in any order. The three-beam laser in the remote-controlled 16/2R generates one beam for signal data and two beams for tracking data. To reduce distortion of the audio signal, linear digital-to-analog conversion is employed. The display shows the current track number and its elapsed time. Price: \$369.95. ADC, Dept. SR, 71 Chapel St., Newton, MA 02195.

Circle 126 on reader service card



Vector Research

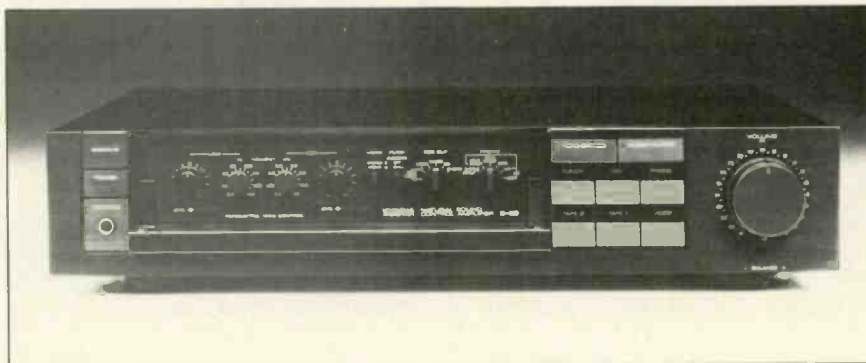
The VCX-220 stereo cassette deck from Vector Research has Dolby B and Dolby C noise reduction, a timer button for recording controlled by an external timer, and soft-touch transport controls that allow switching between modes without stopping first. Other features include record-level and balance controls, soft eject, a three-digit tape counter, metal-tape capability, separate LED level indicators for each channel, and a stereo headphone jack. Wow-and-flutter is rated as 0.055 percent wrms, signal-to-noise ratio with Dolby C as 75 dB. Weight is 7.7 pounds. Price: \$149.95. Vector Research, Dept. SR, 20600 Nordhoff St., Suite 310, Rowland Heights, CA 91748.

Circle 127 on reader service card

Yamaha

A two-band parametric equalizer in Yamaha's C-85 preamplifier allows a user to select the center of two frequency bands, adjust the bandwidths, and set the levels. The center of the low-frequency band can be selected from a range between 31.5 and 800 Hz. The center of the high-frequency band can be selected from a range between 800 and 20,000 Hz. Each bandwidth is adjustable from three-tenths to three times the center frequency. Levels are also set separately, with a range of ± 12 dB.

The preamplifier has inputs for a CD player, a video sound source, two tape decks, a tuner, and a turntable. An LED display indicates the selected input. Loudness is continuously variable, and



dual tape-monitor inputs and a record-out selector permit recording one source while listening to another. Other components can be powered through

six outlets. Price: \$799. Yamaha Electronics, Dept. SR, 6660 Orangethorpe Ave., Buena Park, CA 90620.

Circle 128 on reader service card

The Equalizers

These new equalizer/amplifiers from Coustic add a new dimension to car audio. By including either the model EQ-1010 or the model EQ-1020 in your mobile audio system you can program 4 different spectral settings into memory for instant recall. You no longer need to fumble with mechanical sliders until you discover the best settings for each musical style. With a Coustic equalizer, if you are listening to your favorite classical FM station and you need 1 or 2 dB of bass boost while leaving all other functions flat, you can program memory 1 for recall by a simple touch of a button. If your prized jazz cassette recording has too much nose, just cut

15 KHz by 2 or 3 dB and enter the setting into memory 2 for recall.

The EQ-1010 and EQ-1020 have built-in spectrum displays, to indicate the music's spectral density for easy identification of frequencies needing a boost or a cut. Both the EQ-1010 and EQ-1020 have an auxiliary input for digital compact disc players. The EQ-1020 also has dbx* noise reduction, which is 100 times more effective than Dolby** when listening to dbx-recorded music.

All of these features, plus built-in high power makes Coustic... a sound investment.


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*dbx is a registered trademark of dbx Inc.

**Dolby is a registered trademark of Dolby Laboratories.

CIRCLE NO. 65 ON READER SERVICE CARD

© Coustic 1986

by Larry Klein



Repeat-Play Damage

Q My turntable has a repeat function that allows a record to be played several times in succession. I have been

told, however, that records can be damaged if several hours are not allowed to elapse between each play. If that is so, why do manufacturers provide a repeat function?

CHARLES W. SPURR
St. Mary's City, MD

A Whatever happens at the stylus/groove-wall interface is a dynamic process taking place on a microscopic level, which makes it particularly difficult to observe and then generalize about. For many years the theory was that during normal play a stylus slightly indented the vinyl groove walls, which would then take a certain amount of time to recover. If the groove was replayed before the vinyl had a chance to regain its shape, permanent deformation would take place. The theory originated before long-contact, light-tracking styli were available and was never modified in the light of later experience with today's better cartridges.

Wear comes about through a variety of mechanisms:

Hard foreign particles, such as dust or grit, become trapped between the sliding surfaces of the stylus and groove

walls and cause gouging or scratching.

There is enough heat generated (through pressure) at the minute junctions of the stylus tip and the groove walls to fuse the vinyl momentarily to the stylus tip. When the connection is torn asunder, the vinyl becomes scuffed and scored.

It has been suggested that pitting is caused by subsurface stresses produced by the pressure shock wave generated by the traveling stylus.

And we shouldn't forget the two major groove killers; improperly tracking cartridges and worn styli.

All these types of damages are clearly visible under a scanning electron microscope, although, for several reasons, the damage frequently looks worse than it sounds.

In any case, I have never heard any noise or distortion that I could attribute solely to quickly repeated plays. In fact, an audiophile of my acquaintance once set up an automatic player to replay a small section of a record repeatedly. During later playback of the entire disc, there was no way to tell the heavily played section from the rest of the record. Keep in mind, however, that the

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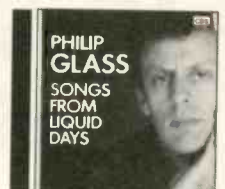
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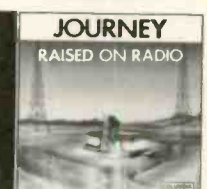
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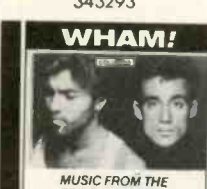
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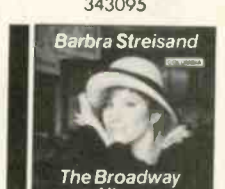
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338616. Miami Vice—Music From The Television Series. G. Frey; #1 You Belong To The City; many more. (MCA)
339903. The Cars—Greatest Hits. Tonight She Comes; Drive; more. (Elektra)
341263. Enoch Light & The Light Brigade—Big Bands Of The Thirties. Begin The Beguine; more. (Project 3)
322008. Linda Ronstadt & The Nelson Riddle Orch.—What's New. (Asylum)

323261. Lionel Richie—Can't Slow Down. All Night Long; Stuck On You; Hello; etc. (Motown)
340182. Philip Glass—Mishima. Original music from the film. (Nonesuch)
335547. Berlioz: Symphonie Fantastique. Barenboim, Berlin Phil. (Digital—CBS Masterworks)
331264. Bryan Adams—Reckless. #1 hit: Heaven; Run To You; etc. (A&M)

343160. Beethoven: Symphony No. 9 (Choral). Bruno Walter, Columbia Sym. (CBS Masterworks)
318089. Michael Jackson—Thriller. Billy Jean; The Girl Is Mine; etc. (Epic)
273409. Beethoven: Piano Sonatas. Vladimir Horowitz plays: Appassionata; Moonlight; Pathétique. (Columbia)
320499. The Police—Synchronicity. Winner of three Grammy Awards (A&M)

341073. Steely Dan—A Decade of Steely Dan. Reeling In The Years; Hey Nineteen; more. (MCA)
337279. Plácido Domingo—Save Your Nights For Me. Love songs. (CBS)
288670-398677. Barry Manilow—Greatest Hits. It's A Miracle; Mandy; etc. (Counts as 2—Arista)
322024. Huey Lewis & The News—Sports, Bad As Bad; Heart & Soul; etc. (Chrysalis)

336578-396572. Bach: Flute Sonatas—Rampal, flute; Pinnock, harpsichord, etc. (Counts as 2—Digital—CBS Masterworks)
314443. Neil Diamond's 12 Greatest Hits, Vol. 2. You Don't Bring Me Flowers (with Barbra Streisand); etc. (Columbia)
340760. Stevie Nicks—Rock A Little. Top 10 Talk To Me; I Can't Wait; title cut; etc. (Modern)

328740. Mozart: Piano Concerto No. 26 (Coronation); Rondos. Murray Perahia and English Chamber Orchestra. (Digital—CBS Masterworks)
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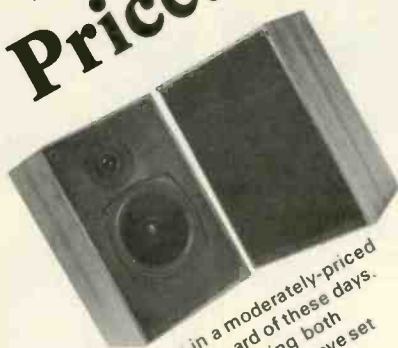
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AUDIO Q. AND A.

cartridge used had excellent tracking ability and a light, but adequate, stylus force. A single play with a mistracking stylus is likely to cause far more audible groove damage than repeated plays with a long-contact stylus tracking properly at a low force.

Cassette Cleaning

Q I have a large collection of cassettes whose life span I want to preserve and extend as much as possible. Are there any products that clean cassette tapes?

DARYL WOERLEY
Fort Stewart, GA

A Yes, and they are called cassette recorders. The bad news is that each time you play or record a cassette, a minute amount of the tape coating is deposited on your machine's capstan and idler wheel. The good news is that in the last decade improved tape-coating techniques have significantly lessened the seriousness of the oxide-shedding problem. In fact, many coating binders now used in manufacturing top-of-the-line audio tapes were originally developed for videotapes. Obviously, any coating that can withstand the wear and tear of rapidly spinning video heads will not run into trouble when traveling at a leisurely 1 7/8 ips over stationary audio cassette heads. There are several excellent cassette-machine cleaning tapes available, and their use every three or four months should take care of any coating debris that might accumulate on your machine's heads, capstan, and pinch-rollers.

There are no cassette-tape cleaners as such, mostly because there is no need to clean cassette tapes. And, in fact, use of the wrong type of cleaning substance could chemically damage the tape coating and possibly clog your machine. Proper storage conditions are your best guarantee of extended tape life. Keep your tapes at least several feet away from sources of magnetic fields (speakers and any equipment with power transformers or motors), and try to keep the temperature and humidity reasonably constant. Cassettes should be stored vertically, and frequent fast-wind/shuttling of the tape should be avoided.

Some experts recommend that you "exercise" your tapes by playing them from end to end at least every six months, on the theory that this will prevent adhesion and minimize magnetic transfer of the signal between adjacent tape layers. I've seen no authoritative data, however, on whether the problem (or the solution) is valid. In any case, such a procedure could turn out to be a full-time job for anyone with a large tape collection.

Remote-Control Interference

Q With an increasing number of components operating with infrared remote controls, what are the chances that two remotes will interfere with each other?

WILLIAM NABOR
Mission Viejo, CA

A Unfortunately, very good. For example, the remotes for my JVC VCR and Pioneer videodisc player will, in certain functions, switch channels on my Proton monitor's tuner. And GE's "universal" remote control, the Control Central, which can "learn" the codes of several separate remotes from other manufacturers, won't solve the problem of different machines responding to the same coded signal for different functions.

I recently read something about a Japanese committee being set up to standardize function codes on remote control units, but I have no further details. In any case, I wish the committee good luck. I predict that there will ultimately be a standard, since I can't think of anyone with a vested interest in a particular coding scheme who would want to stand in the way.

Cassette Variations

Q Within the broad categories of tape (normal, high-bias, and metal), there seem to be variant subcategories with slightly different characteristics produced by each manufacturer. Can you help me identify those characteristics? Also, are C-120 tapes reliable? I've been told they have a tendency to stretch and to have more print-through.

NORMAN KRASNOW
Brooklyn, NY

A I'm afraid you've come to the wrong place for help in sorting out the variations found within each tape type. It would be difficult to identify the sometimes subtle permutations in tape coating characteristics wrought by the various manufacturers in competitive pursuit of sales. I can tell you this, however: manufacturers have been known to change a cassette tape's coating formulation without necessarily changing its "model" number. That's the reason why two batches of the same brand and designation bought eight months apart may sound slightly different in playback despite the use of the same bias settings during recording.

Apparently, many cassette-deck manufacturers still regard C-120's as risky and recommend against their use. In a C-120 cassette, both the base material and its magnetic coating may be thinned out in order to cram the extra tape footage between the halves of a

standard cassette shell. As a result, the mechanical and electrical performance of a C-120 is difficult to maintain at the same quality level as that of a C-90.

Videotape Erase

Q Does anyone manufacture a device to wipe the recorded audio and video material from a videotape similar to those used to erase audio tapes?

WALTER PETRYSHYN
Essex Falls, NJ

A What you want is called a bulk eraser. It is actually a large AC electromagnet designed to radiate a strong alternating electromagnetic field into any object brought close to its active surface. This 60-Hz field scrambles any existing recorded magnetic patterns on a tape, thus erasing it.

The instructions for most bulk (and tape-head) erasers tell you to remove the tape from the vicinity of the eraser before turning it off. The purpose of that maneuver is to provide a gradually attenuated erase signal rather than risk producing a large magnetic pulse on the tape at the moment the eraser is switched off. You'll find videotape bulk erasers at most video-equipment retailers at prices ranging from about \$30 to several hundred dollars for professional units.

Tape Eject

Q I've read in several articles that the better car stereo tape players are all designed to eject cassettes at end of play or when the car's ignition or the player is switched off. As I understand it, the purpose is to prevent damage to the tape or drive mechanism that might occur if the cassette is left in a playing position. I recently bought an expensive top-of-the-line model from a well-known manufacturer, and only after it was installed did I become aware that the cassette did not eject as it should. The dealer tells me not to worry, that there is no problem. Is there?

ROBERT SINGER
Mamaroneck, NY

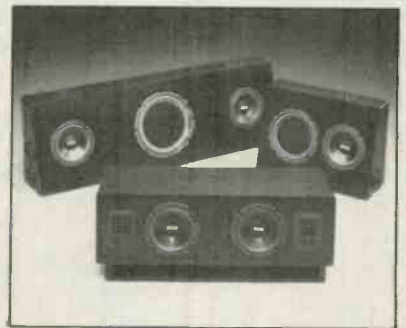
A Probably not. Those who offer advice on car cassette players should be aware that some player mechanisms simply disengage from the cassette rather than physically eject it from the player. You can test by ear whether or not the mechanism in your player disengages. With a cassette in play and the volume turned down, put your ear close to the cassette well and then switch off either the car's ignition or the player. You should be able to hear the player's solenoid system releasing the head and capstan drive mechanism from the playing position.

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CHALLENGING DESIGN.

HOW BOB CARVER CREATED A NEW MAGNETIC FIELD AMPLIFIER WITH THE SOUND CHARACTERISTICS OF A \$3000 MODEL, SATISFIED SOME OF THE WORLD'S MOST HIGHLY TRAINED AUDIO EARS... AND HOW YOU CAN OWN HIS DESIGN FOR UNDER \$500.

Bob Carver's newest Magnetic Field Amplifier is sending shock waves through the staid audiophile world. Because it won a challenge that no other amplifier designer could even consider.

The M-1.0t was judged, in extensive listening tests by one of America's most respected audiophile publications, to be the sonic equivalent of a pair of legendary, esoteric mono amplifiers which retail for over five times as much.

A DESIGN FOR THE CHALLENGE OF MODERN MUSIC REPRODUCTION.

Before you learn the fascinating details of Bob Carver's unprecedented feat, let's consider the final product of that challenge. An amplifier design which stands on its own merits in any case, with astonishingly high voltage/high current output and exclusive operation features. An amplifier for the demands of compact digital discs, VHS Hi-fi and other wide dynamic range playback media.

THE M-1.0t:

- ◇ Has a continuous FTC sine-wave output conservatively rated at 200 watts RMS per channel into 8 ohms from 20Hz to 20kHz with no more than 0.15% THD.
- ◇ Produces 350-500 watts per channel of RMS power and 800-1100 watts peak power for transients. (8 ohms and 4 ohms respectively).
- ◇ Delivers 1000 watts continuous sine wave output at 8 ohms in bridging mode without switching or modification.
- ◇ Employs Bass Phase Inversion circuitry that can essentially double current output at low frequencies.

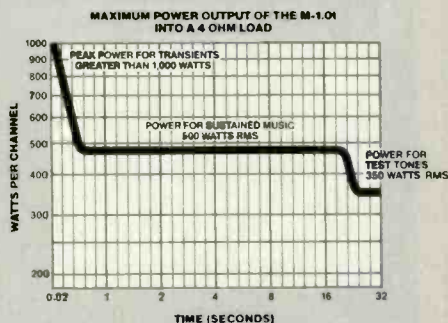
- ◇ Has a -110dB signal-to-noise ratio and no need for noisy external fan, making it exceptionally quiet.
- ◇ Includes elaborate safeguards including DC Offset and Short Circuit Power Interrupt protection.
- ◇ Is capable of handling unintended 1-ohm speaker loads without shutting down.
- ◇ Uses a power display capable of 1 millisecond peak response time and instant warning of clipping.



Accurate to as little as 1dB, the M-1.0t's 2-color power meters respond within a millisecond of a transient impulse, identify momentary clipping and serve notice of protection circuit activation.

POWER FOR THE CHALLENGES OF MUSICAL WAVEFORMS.

The rating differences between the M-1.0t's FTC and Carver's continuous



The Carver M-1.0t delivers massive power at all important output levels.

RMS power reserves represent Bob's insistence that electronic designs should address real world problems. He reasoned that the M-1.0t must excel at

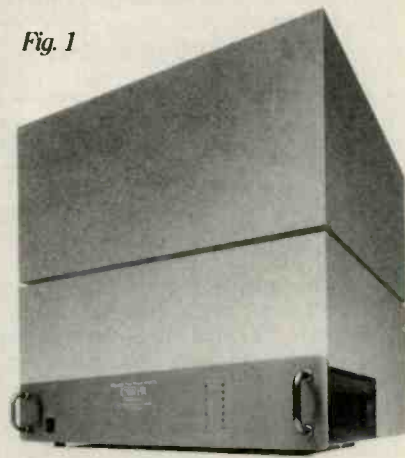
reproducing those types of power waveforms that are most essential to music's stunning impact and realism.

First there are the instantaneous peak transients—the sudden individual attacks of each musical note which demand a tremendous amount of amplifier power. While these waveforms last less than 1/100 of a second, they form the keen edge of musical reality.

Next come combinant musical crests of demand from multiple instruments and their harmonics. These longer-term power demands usually come and go in less than a second, yet can tax all but the most powerful amplifier.

Thus, even at 8 ohms and at extremely high output current levels, the Carver M-1.0t not only delivers over 800 watts of peak power for momentary musical transients, but can provide over 350 watts RMS of long-term power for demands lasting up to 20 seconds. More power, more current and more voltage than any other comparably-priced amplifier.

Fig. 1



Two distinctively different approaches to sonic excellence.

THE MAGNETIC FIELD AMPLIFIER VS. CONVENTION.

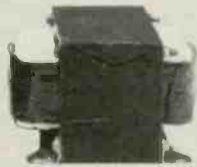
Audiophiles, critics and ultimately other manufacturers have accepted

the wisdom of Bob Carver's innovative approach to delivering power in musical terms. Yet only Carver has so elegantly translated theory into practice.

Figure 1 shows the new Carver M-1.0t Magnetic Field amplifier. It weighs 20 pounds and runs cool to the touch. Behind it is the outline of the pair of legendary mono amplifiers you'll read more about below. Even individually, they can hardly be lifted and demand stringent ventilation requirements. And yet, according to some of the most discriminating audiophiles in the world, Bob's new design is their sonic equal.

The ultimate secret lies in the patented Magnetic Field Coil (figure 2) employed in the Carver M-1.0t. Instead of increasing cost, size and heat output with huge storage circuits, Magnetic Field Amplification delivers its awesome output from this small but powerful component. The result

Fig. 2



A single Magnetic Field Coil supplants traditional heavy power supplies.

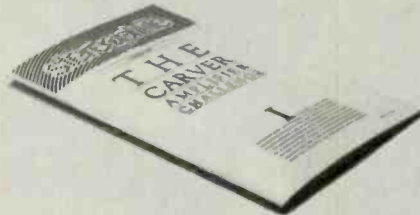
is a design capable of simultaneous high current and high voltage. A compact cool-running design that fills your room with sound, not bulk.

CARVER'S GREAT AMPLIFIER CHALLENGE.

On the merits of its enviable specifications and features alone, the M-1.0t could easily have become another industry benchmark of power, accuracy and economy.

But Bob is never satisfied. He felt that his fifth Magnetic Field Amplifier design should be even more remarkable.

So last year, he made a bold offer to the editors of *Stereophile Magazine*, one of America's most respected audiophile publications. He claimed that he could make special modifications to his new amplifier design which would enable it to sound EXACTLY like any high-priced, esoteric, perfectionist amplifier (or amplifiers) the editors could choose.



Moreover, his design work would not happen in his Lynnwood, Washington laboratory, but in a motel room near *Stereophile's* offices in New Mexico. And would match the M-1.0t's final sound to any contender in 48 hours!

As the magazine put it, "If it were possible, wouldn't it already have been done? Bob's claim was something we just couldn't pass up unchallenged."

Out of respect, ethics (and even a little bit of awe), neither *Stereophile Magazine* nor Carver will divulge the name of the legendary "world class" mono vacuum tube amplifiers that were selected as the M-1.0t's contender.

Suffice to say that what transpired in the next 48 hours is high fidelity history. It makes great reading in *Stereophile*, Vol. 8, No. 6, or in the reprint we'll send you on request.

MUSIC IS THE FINAL PROOF.

The *Stereophile* evaluation team was admittedly skeptical ("We wanted Bob to fail. We wanted to hear a difference").

They drove both amplifiers with some of the finest components in the world. Through reference speakers that are nothing short of awesome.

But it was their ears and carefully selected music ranging from chamber to symphonic to high-impact pop that led them to write, "... each time we'd put the other amplifier in and listen to the same musical passage again, and hear exactly the same thing. On the second day of listening to his final design, we threw in the towel and conceded Bob the bout. According to the rules... Bob had won."

The inquiring audiophile can't help but wonder if M-1.0t production models will sound as good. Ask the man who designed it "I promise they will sound exactly the same. And just as good. In fact, I stake my reputation and that of our company on it"

SHARE THE CHALLENGE AND THE VICTORY.

The real winner is you. Because you can own world class, superlative electronics at reasonable prices by visiting your nearest Carver dealer. Compare the new M-1.0t against any and all competition. Including the very expensive amplifiers that have been deemed the M-1.0t's sonic equivalent. But even if you can't make that comparison, you won't be surprised when the M-1.0t lives up to every other claim made in this ad.

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by Christie Barter



Congratulating tenor Luciano Pavarotti, who has won Gold and Platinum status

All That Glitters

WHAT is a Gold Record, anyway? Or a Platinum one? Or Multi-Platinum, for that matter? Who gives them out, on what basis, and to whom? Is it all just hype intended to sell more records? These are questions a good many of our readers probably ask themselves—and not unreasonably, since we can't always explain—whenever we refer to Gold or Platinum in the "Bulletin" or "Record Makers" sections of this magazine. And the answers to those questions can be a little complicated.

The awards are given by the Recording Industry Association of America (RIAA), which describes itself as a "non-profit trade association representing the U.S. sound recording industry." It was founded in 1952 and is supported by some 150 member companies, which manufacture and distribute over 85 percent of the prerecorded music sold in this country, and its awards program was set up to focus consumer and trade attention on the best sellers produced and marketed by those companies.

The (always capitalized) Gold Al-

bum award was established in 1958. Under today's criteria it is given when an album sells a minimum of 500,000 units, including LP's, tape cassettes, and Compact Discs (sets of multiples count as one unit). Album sales must also reach a "manufacturer's dollar volume" of at least \$1 million, calculated as a third of the suggested list price. The first Gold Album was the original-soundtrack recording of *Oklahoma!*, released by Capitol in 1955. The total number of albums "certified" Gold by the RIAA as of the end of May was 2,665.

Just to make sure the record companies are not inflating the figures when they submit a recording for award consideration, the RIAA engages an independent accounting firm to certify that required sales totals have been met.

Gold Singles are easier to certify than Gold Albums. Singles must sell at least one million units; no dollar figures are involved. A twelve-inch single, usually a remix of the traditional seven-inch single, counts as two units.

Beyond Gold there's Platinum. Platinum Albums must sell a mini-

mum of a million copies, with a manufacturer's dollar volume of \$2 million—based, again, on one-third of list—and Platinum Singles are those that reach sales of two million units. (Luciano Pavarotti, by the way, is the only classical artist to achieve both Gold and Platinum status for a solo album, his Christmas album "O Holy Night" on London Records. He also holds Gold for his "O sole mio" album.)

Beyond Platinum, even, there's Multi-Platinum, achieved when an album or a single can be certified for additional million-unit sales. Recent examples are John Cougar Mellencamp's "Scarecrow" and Barbra Streisand's "The Broadway Album," both of which have been certified at the three-million level, and Whitney Houston's phenomenal debut album, which has sold over five million in little over a year.

The Platinum awards program was initiated by the RIAA in 1976, and until now albums released any earlier than that have been ineligible for Platinum certification. As of June of this year, however, any recording released since the inception of the awards program in 1958 can obtain single or multiple Platinum certification. And there are bound to be a good many.

Keeping up with the times, the RIAA has also set criteria for music videos. To be certified Gold a music video must rack up sales of 25,000 units or the equivalent of \$1 million in sales at the suggested list price. Platinum certification goes to any music video selling in excess of 50,000 units or \$2 million at list.

Sometimes you'll read that a particularly hot album has "shipped Gold." This simply means that advance orders from retailers have met sales quotas sufficient for Gold certification *before* the actual release date that was set by the record company.

To whom do the awards go? They go to the artist(s) and producer(s), who usually get their Gold or Platinum award discs with elaborate presentations from the record company, which pays for them. They don't cost a lot (it's not real gold, Virginia). The true worth of the award lies in its value as a mark of success—and all that that means. Which *is* a lot. □

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Brahms, 21 Hungarian Dances Claudio Abbado conducts the Vienna Philharmonic Orchestra. DG DIGITAL 115408

Alabama: Greatest Hits • She And I, Why Lady Why, Feels So Right, Tennessee River, others. RCA 120247

Carmen (Highlights) • Film soundtrack. Migenes-Johnson, Domingo, Maazel conducts. Erato DIGITAL 154105

Phil Collins: No Jacket Required • One More Night, Susudio, Don't Lose My Number, etc. Atlantic 120771

The Glenn Miller Orchestra: In The Digital Mood • In The Mood, Chattanooga Choo-Choo, etc. GRP DIGITAL 143293

Mozart, Symphonies Nos. 40 & 41 (Jupiter) • James Levine with the Chicago Symphony. RCA DIGITAL 104810

John Cougar Mellencamp: Scarecrow • Small Town, R.O.C.K. In The U.S.A., etc. Riva 144512

Bach, Organ Works • Daniel Chorzempa plays the Toccata & Fugue in D Minor, others. Philips DIGITAL 115193

Daryl Hall & John Oates: Live At The Apollo • Apollo Medley, Everytime You Go Away, others. RCA 140625

Wagner, Orchestral Highlights From The Ring • Vienna Philharmonic Orchestra/Solti. London DIGITAL 115426

Lionel Richie: Can't Slow Down • All Night Long (All Night), Running With The Night, etc. Motown 110767

The Cars: Greatest Hits Tonight She Comes, Drive, You Might Think, Shake It Up, others. Elektra 153702

The Canadian Brass: High, Bright, Light & Clear • Baroque gems for brass ensemble. RCA DIGITAL 144529

Mozart, Requiem • Schreier leads the Leipzig Radio Choir & Dresden State Orch. Philips DIGITAL 115039

Simple Minds: Once Upon A Time • Alive And Kicking, All The Things She Said, others. A&M 142320

Sunday In The Park With George • Bernadette Peters, Mandy Patinkin & original cast. RCA DIGITAL 154014

Bach, Brandenburg Concertos Nos. 4-6 • The English Concert led by Trevor Pinnock. Archiv DIGITAL 125417

Rimsky-Korsakov, Scheherazade • André Previn conducts the Vienna Philharmonic. Philips DIGITAL 115415

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(AT)

by Julian Hirsch



Optimistic Specifications: Loudspeakers

NO consideration of optimism in hi-fi equipment performance specifications would be complete without discussing loudspeakers. In fact, speaker specs are virtually synonymous with optimism. It would be fair to describe most of them as pure fantasy, even if they were created with the best of intentions and technical skill. Sad to say, they rarely have the slightest kinship to the real world of listening to reproduced music.

In the case of an amplifier or tuner, it is possible to measure a single, unique output for each specific input level or frequency. Whether or not this sort of measurement is adequate to describe the listening performance of the component (it usually is not), it is reasonably repeatable and serves as a basis for comparing the performance of a product with its manufacturer's claims. For a phono cartridge, things are a little more complicated. We can measure a cartridge's output quite nicely, but we have no way of

knowing what the input signal was. If we assume that a specific test record has a known frequency response (a generally unwarranted assumption), we can at least compare the output of a cartridge with what its manufacturer says it will deliver from that specific test record. Any other make of record (and often a different pressing of the same record) is unlikely to produce the same result. Still, for better or for worse, it is possible to make repeatable measurements and use them as an aid to a product evaluation.

With speakers, we simply have no easy way to get a handle on the input and output signal relationship. It is easy to define the input signal, whether it is a sine wave, pulse, noise, square wave, or anything else. But how does one define the "output" of a speaker? It can be a pressure measurement on any of an infinite number of axes and distances, or it can be a room measurement in the far field, with almost any combination of measurement time or bandwidth; it can be made in an anechoic environment or in a highly reverberant environment, or anywhere between those limits. The possibilities are endless. There is absolutely no standard or even a consensus on what the *real* output of a speaker might be in the sense that we use the term for other audio component specifications.

So, although we can easily determine what input is being supplied to a speaker, we have no way to define its output or even such portions of it that affect the sound we hear in the same room that was used for the measurement. Even if we could establish a clear input/output relationship for a speaker in a given room, it is certain that it would not

be valid for any other room (such as *your* listening room). I rather doubt that we will ever be able to nail down the input/output speaker transfer function in such a way as to give more than the haziest of ideas of what its sound is like, if for no other reason than the near impossibility of defining subjective effects in objective terms with any degree of rigor.

In the light of the known problems in the speaker measurement area, let's look at some of the specs that are applied to speakers. Frequency response, for example: since a speaker's output can never be known, how do you define its frequency response? Easy. Just pick two nice limits such as 40 to 18,000 Hz (if you tend toward conservatism) or perhaps 20 to 20,000 Hz (if

Almost all published speaker frequency-response specifications are, if not invalid, at least unlikely to give a consumer any useful clues to what the speaker might sound like.

you don't). All this tells the consumer is that driving the speaker at a level short of its burn-out limits produces some measurable output over that frequency range outside the speaker cabinet. Often, tolerances are published as well, and ± 3 dB or ± 5 dB may be appended to the specification. Given the somewhat irregular nature of a speaker's output, these tolerances suggest a fairly close microphone placement, on the axis of the tweeter, and perhaps a moderate amount of smoothing of the measurement output to limit the plotted variations.

Now, this measurement technique is not *wrong*. We do much the same thing here at Hirsch-Houck Labs, since there is good reason to believe that very narrow-band response irregularities have relatively little effect on a speaker's sound coloration compared with the effect of octave-to-octave variations. A certain amount of response smoothing is necessary to prevent the important information from being ob-

Tested This Month

JBL L100T Speaker System
Sony CDP-203 CD Player
Proton D1200 Power
Amplifier
JVC DD-VR77
Cassette Deck
Cerwin-Vega 250SE
Speaker System



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scured by unnecessary detail, which in this context is equivalent to noise. The key point to remember is that almost all published loudspeaker frequency-response specifications are, if not invalid, at least unlikely to give a consumer any useful clues to what the speaker might sound like. Although our own speaker response curves help us to assess the overall quality of a speaker, they would probably not convey much information to readers of STEREO REVIEW, which is one reason why we do not publish them.

Most other speaker specifications have little to do with sound quality. Perhaps because of that, they do not seem to be subject to as much exaggeration or hyperbole as frequency-response measurements. Sensitivity, for example, is an important indicator of the amplifier power requirements of a speaker, and, despite different test conditions, we have found an excellent agreement between our measurements and those of most manufacturers.

When I discussed the matter of speaker power ratings in this column a few months ago, I pointed out that they are only a rough guide and should not be interpreted too strictly. Similarly, a speaker's impedance rating is little more than a guide to the user who might wish to drive more than one pair of speakers from the same amplifier, so that he can avoid loading the amplifier with an excessively low impedance. It has nothing to do with sound quality. In most cases, a speaker's impedance varies widely with frequency, although it is generally considered to be the first minimum value above the bass resonance frequency (an accepted rating method that is frequently ignored when the impedance specification is created).

Speaker distortion is another performance specification that is quite meaningless in most practical situations. The distortion of a speaker is rarely given, and you will understand why if you have seen the typical results of such measurements. There can be large variations in harmonic-distortion readings throughout the operating frequency range of any speaker. A major reason for such distortion variations is the speaker's irregular frequency re-

Speaker distortion is another spec that is quite meaningless in most practical situations.

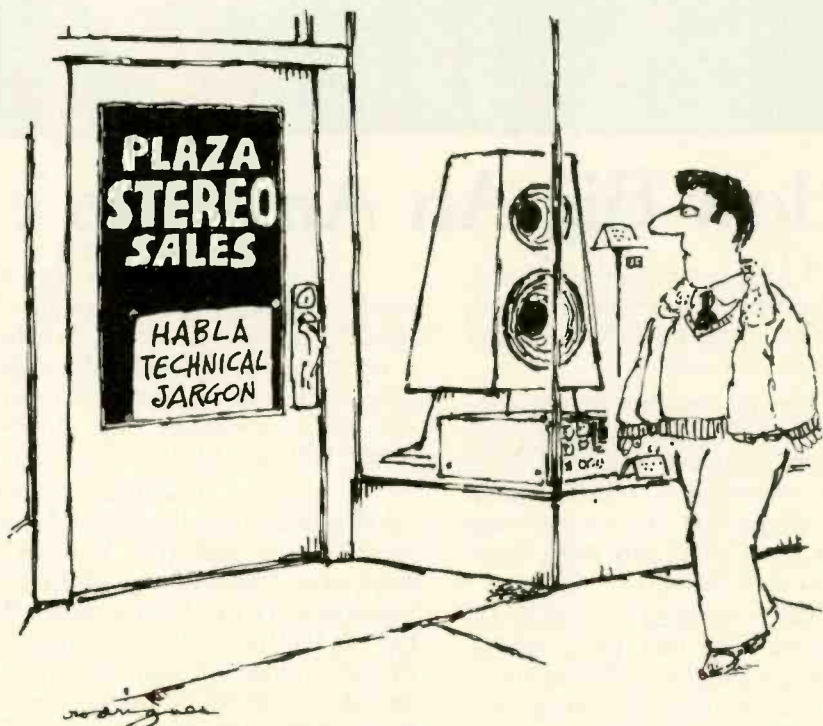
There is no evidence that moderate amounts of ordinary, low order harmonic distortion in a speaker are audible.

sponse. If a speaker is driven with a 1,000-Hz sine wave and has a 10-dB peak at 3,000 Hz, any third-harmonic distortion will be tripled in the measurement. If the frequency is changed slightly (perhaps only by 1 percent or so) the distortion can easily change by a factor of several times. Without automatic-plotting distortion analyzers, such a measurement is impractical. Even if it is made, there is no evidence that moderate amounts of ordinary, low-order harmonic distortion in a loudspeaker are audible as sound coloration in reproduced music.

Sometimes the distortion spec refers to intermodulation distortion (IM), a sum or difference frequency created when two signals of differ-

ent frequency are applied to the speaker. That, too, is usually a meaningless rating, since in multi-way speaker systems many IM frequencies are outside the passband of the driver in which they would be created, so they cannot be radiated by it. Fortunately, few companies publish speaker distortion ratings, and so far no one (to my knowledge) has been able to demonstrate its significance.

At Hirsch-Houck Labs, we do measure speaker distortion, but only in the woofer's operating range below 100 Hz. Most woofers are fairly smooth up to several hundred hertz, so these measurements can be made with reasonable accuracy. Our purpose is not so much to establish the inherent linearity—or lack of it—of the woofer, but to determine how low in frequency it can go before it loses its grip on the air, so to speak, and its cone excursions extend into nonlinear operating regions. This specification is almost never published by speaker manufacturers, but it is probably a more meaningful indicator of a speaker's true bass limits than any frequency-response measurement. □



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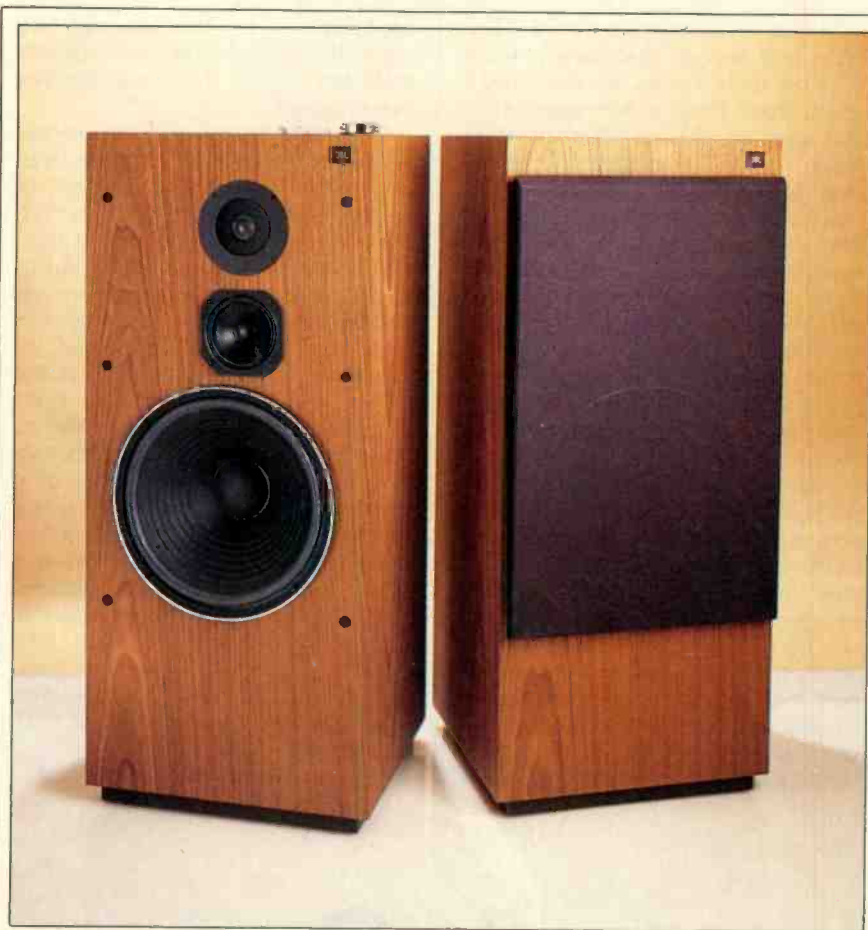
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PHOTOS BY DAVID KELLEY

JBL L100T SPEAKER SYSTEM

Julian Hirsch, Hirsch-Houck Laboratories

THE JBL L100T is a floor-standing speaker system in a handsome oiled-walnut cabinet. It has a 12-inch woofer, a 5-inch cone midrange driver, and a 1-inch dome tweeter. The woofer port opens to the rear of the cabinet. The recessed binding-post terminals on the rear are spaced on $\frac{3}{4}$ -inch centers to accept dual banana-plug connectors. The L100T has no external controls or adjustments.

The black grille cloth is supported about an inch from the speakerboard on plastic mounting posts, which snap into sockets on the board. Since the speakerboard is finished to match the rest of the cabinet, the grille can be removed if desired. The woofer is centered laterally on the board, but the mid-

range and high-frequency drivers are vertically aligned and offset about $1\frac{1}{4}$ inches right of center. This arrangement is apparently not related to imaging, since the left and right speaker units are identical (not mirror image). The JBL L100T measures 37 inches high, 16 inches wide, and 13 inches deep. It weighs about 70 pounds. Price: \$525 each. JBL, Dept. SR, 240 Crossways Park W., Woodbury, NY 11797.

Lab Tests

The room response of the JBL L100T was among the flattest and widest we have yet measured from a speaker, within ± 6 dB from 20 to 20,000 Hz. The differences between the response curves of the left and right speakers—measured separately, with the microphone on the axis

of the left unit and about 30 degrees off the axis of the right speaker—were very small. Bass response was also relatively unaffected by boundary effects. Although the raw room response of a speaker is almost as much a property of the room as of the speaker, the response we measured from the JBL L100T was nothing less than remarkable.

The close-miked woofer response, measured separately at the cone and the port, varied only 7.5 dB overall from 20 to 900 Hz and a mere 3.5 dB between 35 and 700 Hz. Splicing the woofer curve to the room response resulted in a composite frequency response of ± 3.5 dB from 20 to 20,000 Hz, which is a very impressive performance for any home speaker. With a 2.83-volt input, the system's sensitivity was 92 dB sound-pressure level (SPL) measured at 1 meter. When we drove it with 2.25 volts (corresponding to a 90-dB midrange SPL), the woofer distortion was between 0.2 and 0.5 percent from 100 Hz down to 60 Hz. Below 60 Hz, the port was contributing much of the sound output, but the distortion was still a very low 3 to 3.4 percent in the 20- to 35-Hz range.

The impedance of the L100T was at a minimum of about 5.3 ohms at 120 Hz and 5 ohms from 15,000 to 20,000 Hz. It peaked at 24 ohms at 50 Hz and varied between 5.5 and 13 ohms over most of the audio range. A 6- to 8-ohm impedance rating would seem to be reasonable for this speaker. During our pulse-power tests (one cycle on, followed by

The room response of the JBL L100T was among the flattest and widest we have yet measured from a speaker, and the differences between the on-axis and off-axis response curves were very small.

128 cycles off), the woofer cone reached the end of its linear travel range with an input of 550 watts at 100 Hz into its 5.5-ohm impedance. The 8-ohm midrange driver handled the full 1,400-watt output of the test amplifier at 1,000 Hz with-

out distortion, and the tweeter began to show nonlinearity when driven with 300 watts at 10,000 Hz (into its 6-ohm impedance).

Our quasi-anechoic FFT frequency-response measurements confirmed the exceptional width and smoothness of the L100T's response. It was flat within ± 2.25 dB from 180 to 24,000 Hz when measured at 1 meter on the tweeter's axis. Although we had no information on the crossover frequencies

A total lack of mid-bass boominess on male voices set the L100T apart from most other speakers—and they are few in number—that share its ability to generate clean, deep bass down to 20 Hz.

used in the system, response measurements with the microphone placed approximately equidistant from the woofer and midrange cones and from the midrange to the high-frequency dome revealed sharp cancellations at approximately 900 and 3,000 Hz, which would be reasonable crossover points. There was no clue to the actual crossover frequencies in the room-response measurements. The phase linearity of the system was very good; the group delay was constant within ± 0.1 millisecond from 3,000 to 20,000 Hz, and the maximum change was 1 millisecond at about 1,000 Hz. The frequency-response curves measured on-axis and 45 degrees off-axis differed by no more than 4 or 5 dB up to 10,000 Hz, the difference increasing to 8 or 9 dB at 15,000 Hz.

Comments

The excellent measured performance of the JBL L100T came as no surprise. We listened to the speakers for some time before making any tests, and it was obvious from our first hearing that these were exceptional speakers. Their balance, smoothness, and extended response at both ends of the audio spectrum were all striking, and a pair of speakers we had previously favored always came off as second-best in

A/B comparisons with the L100T's.

A total lack of mid-bass boominess on male voices set the L100T apart from most other speakers—and they are few in number—that share its ability to generate clean, deep bass down to 20 Hz. Similarly, the clarity and transparency of its high-end response were distinctly superior to what we have heard from most competitively priced speakers, as well as some far more expensive models. Yet, because of its flat response, which extends well beyond the audio range, it never had a trace of "edginess" or "bite."

Although our tests showed that the L100T can handle very large peak-power inputs without damage or obvious distortion, it is considerably more sensitive than most speakers of comparable quality and can be driven to very high volume levels with any good 80-watt amplifier. As with any speaker whose woofer operates in a vented enclosure, it is advisable to limit the infrasonic output of the amplifier

used with the L100T (although you are unlikely to damage this speaker with any signal that your hearing can tolerate).

Our recent experience with speakers in the \$500 to \$600 range indicates that there are a number of superior-sounding models in that price bracket, which seems to offer the highest ratio of sonic performance to price available to serious audiophiles. Without attempting to make any specific comparisons, we can state that the JBL L100T is one of the star performers in its price range. We find it strange, however, that the speaker's model designation conveys the impression of a relationship with the L100 series that JBL manufactured for many years. One could not imagine two more different-sounding speakers, to say nothing of the differences in size and price between them. The L100T is something wholly new, and it should carve out its own reputation in the marketplace with no difficulty.

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The CT-A9X(BK) cassette deck: "To say that we were impressed with the Pioneer CT-A9X would be an understatement. Outstanding as its measured performance was, it did just as well in actual use." Julian Hirsch, *Stereo Review Magazine*

The F-99X(BK) FM/AM tuner: "The 1986 Grand Prix Award Winner, Pioneer's F-99X(BK) is one of the high-performance components in the company's Elite series, a system of ambitious scope." *AudioVideo International*

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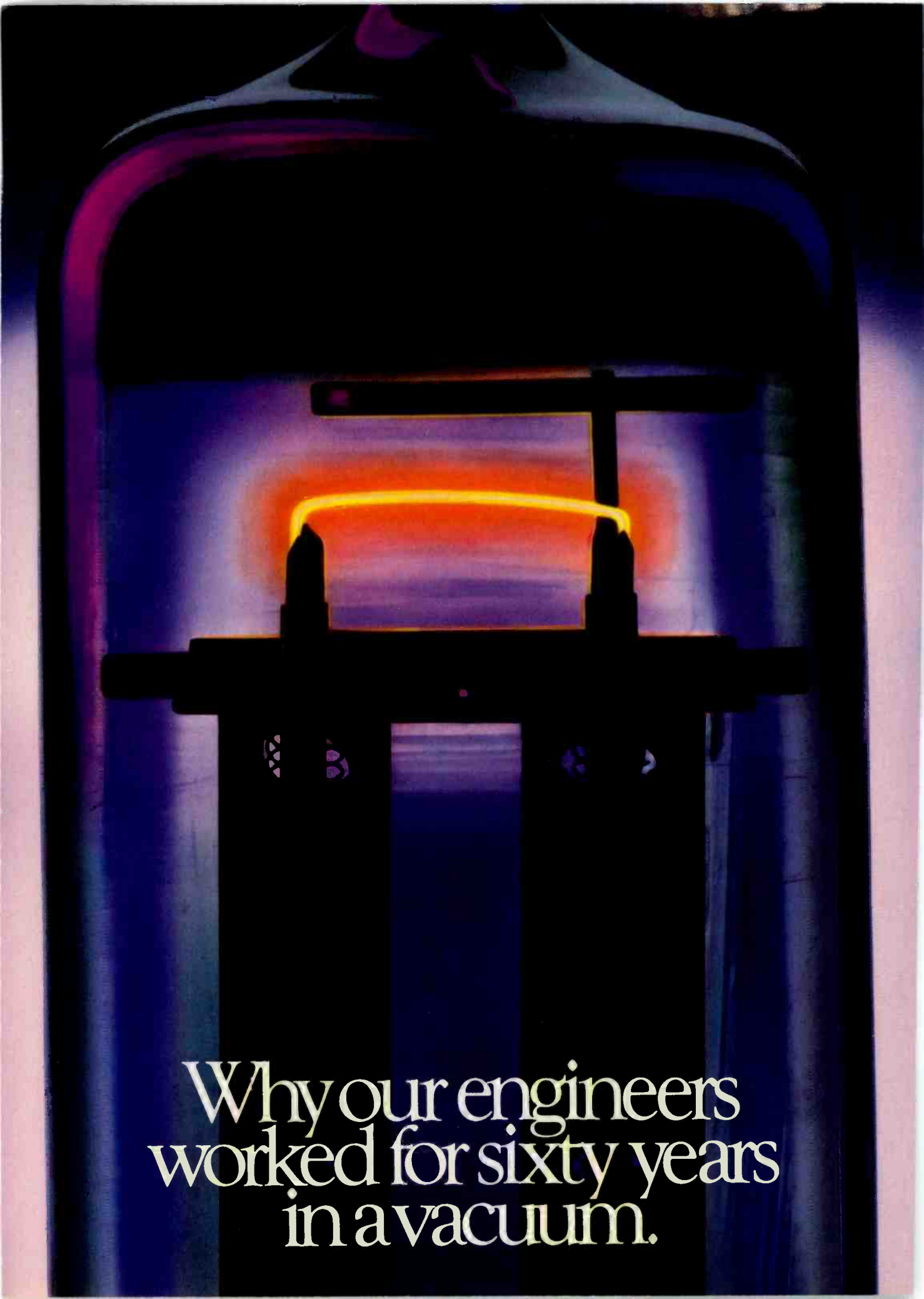
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A photograph of a vacuum furnace. The furnace is a large, dark, cylindrical structure with a glass viewing window. Inside, a bright yellow arc is visible between two electrodes, set against a background of orange and red light. The furnace is supported by a black metal frame. The overall scene is dimly lit, with the primary light source being the arc and the furnace's interior glow.

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SONY CDP-203 COMPACT DISC PLAYER

Julian Hirsch, Hirsch-Houck Laboratories

THE Sony CDP-203 compact disc player features Unilinear Converter circuitry, a combination of double oversampling, digital filtering, and a digital-to-analog (D/A) converter, all controlled by a single master clock signal. According to the manufacturer, this design virtually eliminates the spurious ultrasonic signals (beat frequencies) that are often found in players employing different clock frequencies for their various functions. The CDP-203 also has an Envelope Differential Detection system that "freezes" the motion of the laser pickup when no tracking signal is present. Instead of mistracking if the data flow is interrupted by a disc flaw or other cause, the Sony system is said to be able to play without audible dropouts or loss of tracking in situations that most conventional tracking systems could not handle.

The CDP-203's Random Music Sensor (RMS) system can be set to play any selection of tracks in any desired order. The front-panel numerical keypad used for the RMS programming also provides direct access to any track. By using the +10 and 0 buttons together with the keys numbered 1 to 20, tracks numbered as high as 99 can be selected. The RM-D350 infrared Remote Commander furnished with the CDP-203 duplicates all its basic operating and programming functions.

The CDP-203 can step forward or backward one track or one index number at a time and scan in either direction at a high speed (with audible sound) to locate any part of a recording quickly. A display window shows the player's operating status, including the current track and index numbers and the playing time on the current track. Also in

the window is the Music Calendar, a fluorescent display corresponding to the keypad on the front panel. When a disc is loaded, the Music Calendar lights the numbers of all the tracks. After each track is played, its number is extinguished.

A row of small buttons below the display and keypad section selects the player's special operating modes. One of the two REPEAT but-

The CDP-203's Envelope Differential Detection system "freezes" the laser pickup when no tracking signal is present, enabling it to play without audible dropouts or loss of tracking in situations most conventional tracking systems could not handle.

tons is used to define and repeat a phrase or section of a program, and the other is used to repeat an entire disc or programmed sequence. The AUTO SPACE button inserts a 3-second pause between selections during play, and the TIME button



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FEATURES

- Front-loading motorized disc drawer
- Soft-touch operating controls
- Double oversampling, 16-bit digital-to-analog conversion
- Single clock frequency operates all internal digital functions
- Fast track search
- Fast scanning (sound audible)
- Display of all track numbers on disc (up to twenty) or programmed tracks only, elapsed time of track or disc, total number of tracks and playing time of disc, current track/index number
- Direct or programmed access to any track up to Track 99
- Repeat entire disc, programmed track sequence, or defined section
- Switchable Auto Space to add 3-second pauses between tracks
- Shuffle-play mode to play all tracks in random order
- Headphone jack with separate level control
- Wireless infrared remote control

LABORATORY MEASUREMENTS

Maximum output level: 1.84 volts
Total harmonic distortion at 1,000 Hz: 0.0035% referred to 0 dB;
 0.016% referred to -10 dB;
 0.014% referred to -20 dB
Signal-to-noise ratio: (A-weighted): 102 dB
Channel separation: 98 dB at 1,000 Hz; 93 dB at 10,000 Hz

Frequency response: +0, -0.3 dB from 20 to 20,000 Hz
Cueing time: 1.5 seconds
Cueing accuracy: A
Impact resistance: top, B; sides, A
Defect tracking: tracked all defects on Philips TS5A test disc

switches the display between showing the elapsed or the remaining time in the current track.

The SHUFFLE button is a novel and useful feature of the CDP-203. Pressing it once programs the machine to play all of the tracks on a disc in a random order. If the repeat function is also activated, the entire disc will be replayed indefinitely but with a different sequence each time. The PROGRAM and CHECK buttons are used for programming a sequence and checking one's programming, and the CLEAR button clears all programming from the player's memory.

The CDP-203 has a front-panel stereo headphone jack with an adjacent volume control. The rear apron contains the gold-plated output jacks, a single unswitched a.c. outlet, and a subcode connector for use with future accessories that may require access to the digital program information.

The Sony CDP-203 is finished in black with white control markings. It measures 17 inches wide, 11¾ inches deep, and 3¼ inches high, and it weighs 9¼ pounds. The Remote Commander, powered by two AA cells, is approximately 7 inches

long, 2¼ inches wide, and ¾ inch thick. Price: \$500. Sony Corporation of America, Dept. SR, Sony Drive, Park Ridge, NJ 07656.

Lab Tests

With an EIA standard load of 10,000 ohms in parallel with 1,000 picofarads of capacitance, the CDP-203's output was 1.84 volts from a maximum-level (0-dB) recording. The two channels had identical output levels. The frequency response was perfectly flat from 20 to about 4,000 Hz, dropping off slightly to -0.1 dB at 10,000 Hz and -0.3 dB at 20,000 Hz. The total harmonic distortion was 0.0035 percent at 0 dB, increasing to about 0.015 percent at the -10- and -20-dB levels. The A-weighted noise level was -102 dB referred to a 0-dB recorded level.

Channel separation, an almost unmeasurably high 110 dB at 100 Hz, decreased to 98 dB at 1,000 Hz and 89 dB at 20,000 Hz. Because of the double oversampling, the inter-channel phase shift was relatively low, reaching a maximum of less than 40 degrees at 20,000 Hz. The laser pickup slewed from Track 1 to Track 15 of the Philips TS4 test disc

in 1.5 seconds, faster than most current players, and it had no difficulty making the transition from Track 17 to Track 18, which are not separated by a silent interval, without clipping the opening syllable on Track 18. It tracked all the calibrated defects on the Philips TS4A and TS5A discs without audible errors. The CDP-203 was relatively immune to impact on its sides, but the pickup would skip when the player was slapped sharply on the top (above the disc drawer).

Comments

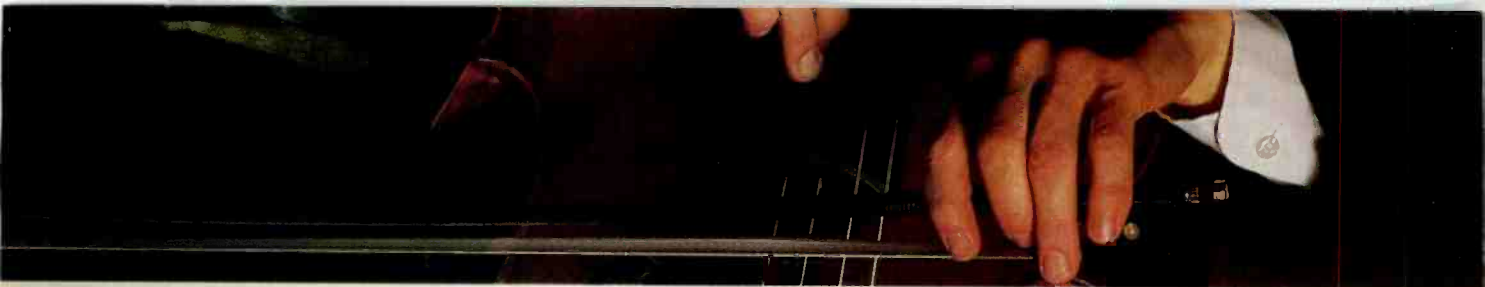
The Sony CDP-203 is a full-featured CD player without the drawback of a complicated control panel that might discourage effective use of its facilities. As with any piece of hi-fi equipment, it is advisable to read the instruction manual before attempting to use the player, but the Sony manual is complete and not difficult to master. The only part of its operation that was not immediately obvious to us was the random programming system.

If you have discs with a large number of tracks, such as samplers, the SHUFFLE feature enables the

The Shuffle button programs the CDP-203 to play all of the tracks on a disc in random order. If the repeat function is activated, the disc will be replayed with a different sequence each time.

CDP-203 to deliver high-fidelity background music all day with no more likelihood of excessive repetition than you will find on many FM stations. For more conventional listening, the player is indeed flawless in sound and handling. The headphone volume was excellent with medium-impedance phones—you could even dispense with an amplifier if you prefer headphone listening. Although the Sony CDP-203 is not one of the least expensive CD players you can buy, it would be difficult to fault it in any respect. The Sony pedigree is very evident in this fine component.

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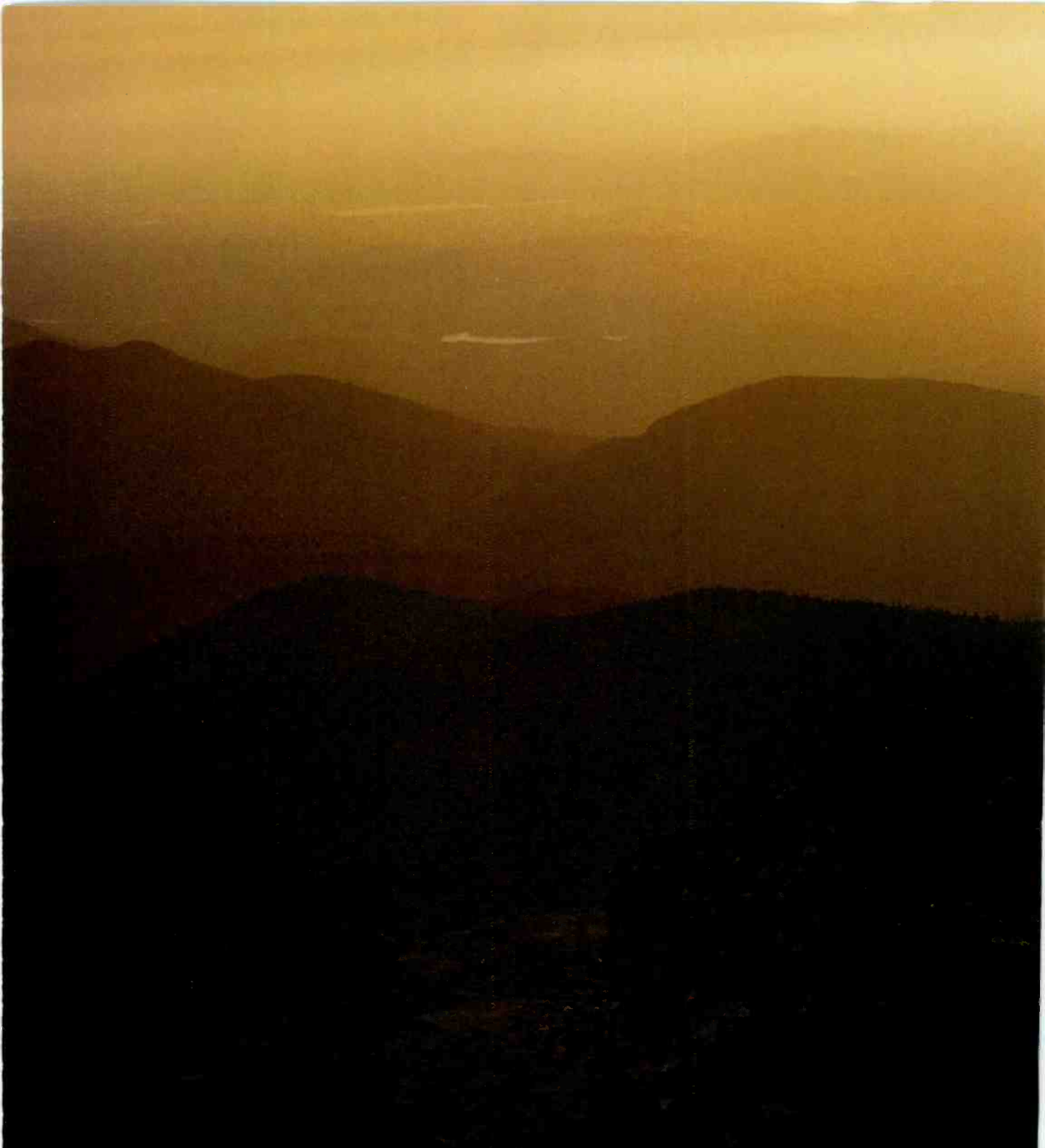
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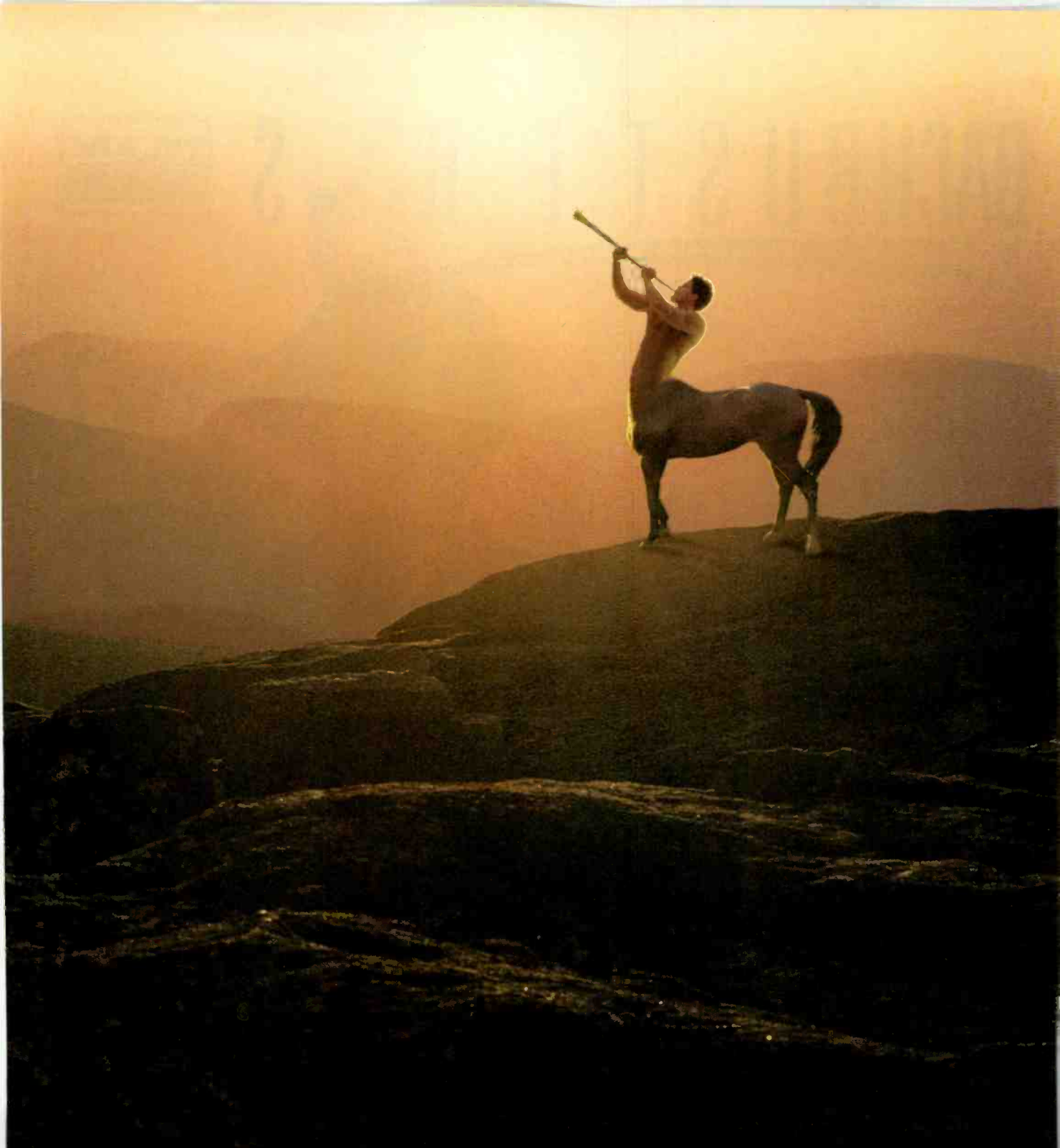


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PROTON D1200 POWER AMPLIFIER

Julian Hirsch, Hirsch-Houck Laboratories

PROTON'S D1200 power amplifier features a Dynamic Power on Demand (DPD) circuit design that gives it an extraordinary dynamic-headroom rating of 7.3 dB. In the "Technical Talk" column in the April 1986 issue of *STEREO REVIEW*, I discussed the significance of a high short-term power-output capability in an amplifier intended to reproduce musical waveforms and some of the design approaches used to achieve this performance. Proton's DPD system was first used in the 40-watt D540 amplifier, and in the D1200 it is responsible for some of the highest power outputs we have measured from any amplifier.

The DPD circuit is designed to allow an amplifier to deliver many times its rated steady-state power for short time intervals. Many musical waveforms can place such demands on an amplifier. Conventional amplifiers can deliver their rated power for extended periods and can usually develop a slightly higher output for short intervals.

Such short-term output is the subject of the EIA dynamic-headroom specification, which is based on a 20-millisecond tone burst repeated twice per second. Typical amplifiers may have a dynamic headroom in the range of 1 to 2 dB, corresponding to power outputs 25 to 50 percent greater than their rated values. In order to deliver several hundred watts of short-term power to a speaker, such amplifiers must be capable of high continuous power outputs, and they are correspondingly large, heavy, hot, and expensive.

Proton's D1200 is a moderately powerful amplifier, rated for 100 watts continuous output into 8-ohm loads from 20 to 20,000 Hz with no more than 0.02 percent distortion. In addition to its normal power supply, the D1200 has a second one that can supply a much higher d.c. voltage to the output transistors when required. Normally the amplifier operates only with the main power supply, but when the signal approaches its clipping level, the second power supply is connected

to the output stages by fast electronic switches. It is designed to supply a higher voltage for a short time, up to about half a second, after which the voltage gradually decays back to the normal operating value. After the transient peak is gone, the second power supply completely disconnects and recharges to await the next peak.

The effect of the DPD circuit is to give a 100-watt amplifier the ability to deliver very high power outputs for several hundred milliseconds instead of merely the 20 milliseconds called for in the dynamic-headroom standard. The major advantage of this approach, compared with conventional amplifiers, is that the power supply, heat sinks, and output transistors do not have to be able to deliver an unnecessarily high continuous power. The resulting economies make a DPD amplifier the sonic equivalent of far larger and more expensive conventional designs. Nevertheless, there is no sign of skimping in the Proton D1200, which boasts two toroidal power transformers (apparently for the two channels) and a number of very large filter capacitors.

In addition, the D1200 is rated very conservatively. It is protected against short-circuits by relays that shut it down in such an event, and it has no current-limiting circuits that

LABORATORY MEASUREMENTS

1,000-Hz continuous output power at clipping: 155 watts into 8 ohms, 175 watts into 4 ohms, 350 watts into 2 ohms
Clipping headroom (relative to rated output): 1.9 dB (8 ohms)
Dynamic power output: 593 watts into 8 ohms, 1,187 watts into 4 ohms, 1,800 watts into 2 ohms

Dynamic headroom: 7.73 dB (8 ohms)
Harmonic distortion (1,000 Hz, 8 ohms): 1 watt, 0.005%; 100 watts, 0.0027%
Sensitivity (for a 1-watt output): 105 millivolts
A-weighted noise (referred to a 1-watt output): -78.6 dB

could prevent it from driving low-impedance speaker loads (or that could cause distortion under certain load and drive conditions). In combination with the DPD system, these features give it some extraordinary power ratings, ranging from a clipping power of 110 watts into 8 ohms to a dynamic power of 1,500 watts (for 20 milliseconds) into 2 ohms! Moreover, the D1200 can also be operated in a bridged mode, becoming a mono amplifier with double its stereo power ratings.

The D1200 is finished in black, with clear plastic over its two large power meters. The meters' logarithmic scales span a range from a few milliwatts to many hundreds of watts (into 8 ohms), and the pointers have a rapid response time to follow program peaks. Insulated binding-post speaker connectors, input jacks, and a stereo/mono switch are in the rear of the amplifier. The D1200 measures 16½ inches wide, 14¼ inches deep, and 4¼ inches high and weighs 33 pounds. Price: \$599. Proton Corp., Dept. SR, 737 W. Artesia Blvd., Compton, CA 90220.

Lab Tests

The exterior (especially the top) of the Proton D1200 became quite hot during its 1-hour preconditioning at one-third rated power, but its temperature did not increase beyond that during subsequent testing. The DPD system made clipping-power measurements somewhat awkward. Since the initial clipping-power level was so much higher than the continuous value, the waveform would appear to clip and then collapse. By gradually increasing the drive level until the onset of clipping, backing off from that point, and waiting for the waveform

to stabilize, we made the necessary measurements without difficulty.

The D1200's output clipped at 155 watts per channel into 8 ohms, 175 watts into 4 ohms, and 350 watts into 2 ohms. We measured the dynamic power response of the amplifier with bursts of 20, 100, and 200 milliseconds repeated twice per second. The 8-ohm output with a 20-millisecond burst was 593 watts, for a dynamic-headroom measurement of 7.73 dB. The power increased to 1,187 and 1,800 watts into impedances of 4 and 2 ohms, respectively. During the longer bursts the available power was lower, of course, but even at 200 milliseconds the 8-, 4-, and 2-ohm power readings were 478, 700, and 1,055 watts. It appeared that only after the signal duration exceeded 1 or 2 seconds did the power output fall to its steady-state value.

The 1,000-Hz harmonic distortion was between 0.0025 and 0.005 percent from 1 to 130 watts into 8 ohms. The 2- and 4-ohm readings were in the range of 0.008 to 0.003 percent from 1 watt to their clipping levels. With both channels driving 8-ohm loads, the distortion was typically about 0.003 percent from 50 to 2,000 Hz at power outputs from 10 to 100 watts, and the maximum reading was 0.024 percent at 20,000 Hz and 100 watts.

The sensitivity of the amplifier was 0.105 volts for a reference output of 1 watt, and the A-weighted output noise was -78.6 dB referred to 1 watt. The slew factor was 2.5 (a 100-watt sine wave became triangular at 50,000 Hz). The amplifier was stable with reactive simulated speaker loads. Its frequency response was flat within +0, -0.2 dB from 20 to 20,000 Hz, falling off to -3 dB at 260,000 Hz. The amplifier

apparently has an infrasonic filter (not mentioned in the specifications) that reduced its response by 1.5 dB at 15 Hz, 10 dB at 10 Hz, and 31 dB at 5 Hz.

Colored LED's on the front panel accurately signal the onset of DPD circuit action and flash at peaks of 3 and 6 dB above rated power. The dimly lit meters cannot be read at any distance from the amplifier, and their indications were consistently about 40 percent low. They responded to burst signals so rapidly, however, that with our 20-millisecond test signal they read only 3 dB lower than the amp's steady-state value.

Comments

The Proton D1200 comfortably surpassed virtually every one of its specifications that we tested, and in such important respects as dynamic power output it performed far beyond its ratings. There is no doubt that the D1200 is one of the most powerful amplifiers made for home use despite its nominal "100-watt" rating.

This is also an uncommonly attractive amplifier. Many powerful basic amplifiers are ungainly, featureless blocks of black metal, but the D1200 is a component that almost no one would mind having on display in the listening room. The weak illumination of the meters unfortunately diminishes their usefulness, though the LED indicators for DPD action worked well. Operationally, the D1200 is as silent and unobtrusive as one could hope for. It emits no fan noise (another benefit of the DPD design), it does not hum or buzz, and it sounds every bit as good as it looks.

About the sound . . . well, since I do not subscribe to the popular notion that good power amplifiers sound "different" from each other, there is not much I can say on that subject. Still, when we were playing some CD's with exceptional dynamic range through this amplifier, the impact of the high-level transients—which often lit the 6-dB DPD light and produced meter readings of more than 400 watts—was nothing short of stunning. Not too many "100-watt" amplifiers can match that performance.

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JVC DD-VR77 CASSETTE DECK

Craig Stark, Hirsch-Houck Laboratories

DESIGNED for listeners who want the convenience of autoreverse, the JVC DD-VR77 cassette deck is a three-head, three-motor unit with Dolby B and Dolby C noise reduction, a tape-positioning editor, and multiple search and play options.

The reverse mechanism, which can be activated either automatically or manually at the end of a side, switches control of the tape motion between a direct-drive forward capstan and a belt-drive rear capstan. Simultaneously, a second motor rotates the Sen-Alloy record/playback head by 180 degrees, placing the head elements in position to scan the tape's reverse side without physically turning over the cassette. This design minimizes the time lost during the reversing process; manually operated, the turnaround seems almost instantaneous. A third motor handles both of the reel hubs, and separate erase heads are used for each direction.

The cassette well on the DD-VR77 is slightly deeper than usual.

The greater depth permits the door to contain a multiple-LED display that shows the direction in which the tape is moving, but it slightly restricts label visibility and head access for cleaning and demagnetizing. Bias and equalization are automatically selected by detectors inside the well that "read" the rear cut-outs on the cassette shell.

Recording levels are controlled by a long-throw (4-inch) slider and a channel-balance knob, and they are indicated on two displays. The main display is a pair of fifteen-segment-per-channel fluorescent indicators that read peak levels from -20 to +9 dB. The supplementary display is a digital readout that registers the level of the higher channel in 1-dB steps from 0 to +12 dB. (This second display is necessary because JVC, like a number of other Japanese manufacturers, uses a 0-dB reference point that is 4 dB below the IEC standard reference level. As a result, to utilize the full dynamic range of metal tape, it must be recorded at levels slightly

beyond what can be shown by the DD-VR77's primary record-level indicators.)

A separate four-digit fluorescent counter is used to show either the elapsed or remaining time on a side, the tape length, conventional tape-counter units, or the number of selections (up to twenty) to be scanned. The DD-VR77 also permits the user to define the beginning and end points of a section of tape for automatic return to stop or repeat play. A tape-editor feature facilitates jockeying the tape back and forth at either normal or half speed, enabling exact location of the start of a passage. In addition, dual-speed fade-in and fade-out controls are provided.

The transport is solenoid-operated through soft-touch pushbuttons, and additional buttons and switches are provided to select noise reduction, a stereo multiplex filter, high-speed scanning, record muting, and operation from an external timer. The front panel also contains a playback level control, a headphone jack, and a socket for attaching a remote-control device. No microphone inputs are provided.

The JVC DD-VR77 cassette deck measures 17 inches wide, 4½ inches high, and 11 inches deep, and it weighs a little under 11½ pounds.

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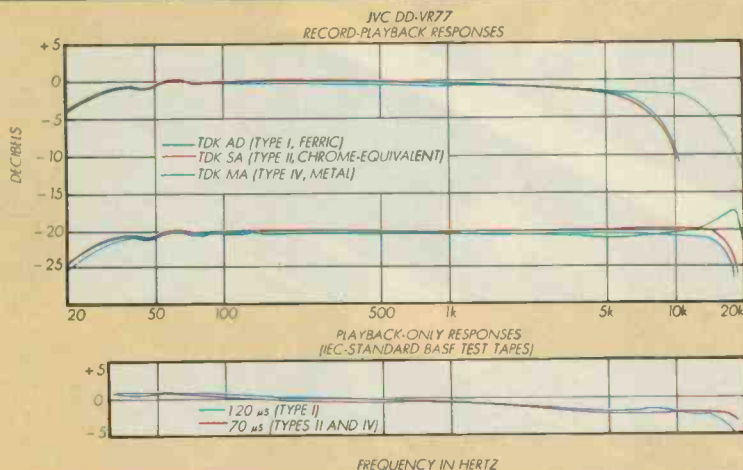
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FEATURES

- Fast-acting autoreverse
- Multi-speed tape editor
- Dolby B and Dolby C noise reduction
- Peak-reading and digital level indicators
- Digital elapsed/remaining-time indicators.
- User-definable tape segment for auto stop or replay
- Defeatable FM multiplex filter
- Wear-resistant Sen-Alloy heads



LABORATORY MEASUREMENTS

Fast-forward time (C-60): 90 seconds

Rewind time (C-60): 94 seconds

Speed error: -0.3% (forward); -0.4% (reverse)

Dolby tracking error: Dolby B, +1.0, -0 dB; Dolby C, +1.5, -0 dB

Wow-and-flutter: forward, 0.047% wrms, 0.062% DIN peak-weighted; reverse, 0.64% wrms, 0.96% DIN peak-weighted

Line input for indicated 0 dB: 70 mV

Line output at indicated 0 dB: 0.43 volt

Meter indication at IEC-standard 0 dB: +4 dB

Tape: TDK AD (Type I, ferric)

IEC 0-dB distortion: 0.50%

Meter indication at 3% third-harmonic distortion: +8 dB

Signal-to-noise ratios (in decibels):

	Unwtd.	A-wtd.	CCIR
NR off	54.2	59.8	57.7
Dolby B	58.0	68.8	62.8
Dolby C	58.8	73.5	76.4

Tape: TDK SA (Type II, high-bias)

IEC 0-dB distortion: 1.05%

Meter indication at 3% third-harmonic distortion: +8 dB

Signal-to-noise ratios (in decibels):

	Unwtd.	A-wtd.	CCIR
NR off	54.5	60.8	58.3
Dolby B	56.4	68.5	68.2
Dolby C	58.5	74.8	76.9

Tape: TDK MA-R (Type IV, metal)

IEC 0-dB distortion: 0.74%

Meter indication at 3% third-harmonic distortion: +10 dB

Signal-to-noise ratios (in decibels):

	Unwtd.	A-wtd.	CCIR
NR off	56.5	62.2	59.4
Dolby B	59.2	70.2	69.3
Dolby C	60.0	76.4	78.0

Price: \$500. JVC, Dept. SR, 41 Slat-er Dr., Elmwood Park, NJ 07407.

Lab Tests

When we received the DD-VR77 at the lab, the heads were misaligned, revealing a significant treble rolloff (-18 dB at 18 kHz) in the

forward direction, though the deck performed normally in reverse. After realignment, the forward playback frequency response with our IEC standard CrO₂-type and ferric test tapes was very smooth, but there was still a slight high-frequency rolloff (3 to 5 dB at 18 kHz). In

reverse the response was almost identical.

Record-playback response was measured with our center-line cassette samples of TDK AD (ferric), SA (chrome-equivalent), and MA (metal). At a 0-dB level the response with the ferric and CrO₂-type tapes was typical of decks in this price class, although the low bass extended further down than normal. The increased treble capacity of the metal tape (above 10 kHz) was also more pronounced than usual. The +3-dB peak shown for TDK MA in the accompanying graph, while sonically harmless, appears to be a product either of slight over-equalization or under-bias. With the other tapes, response was extremely flat out to the 16- to 17-kHz area, which is the deck's rated upper limit.

Signal-to-noise measurements were extremely good, especially with the Dolby circuits on. Indeed, the Dolby-induced frequency-response errors were far less than we normally encounter. On the other hand, the wow-and-flutter figures were not as good as we could normally expect from a deck of this price. The explanation lies in the compromise made to achieve the autoreverse feature. The two capstans never simultaneously engage the tape to form a flutter-reducing closed loop as they do in most dual-capstan transports. Instead, they operate independently.

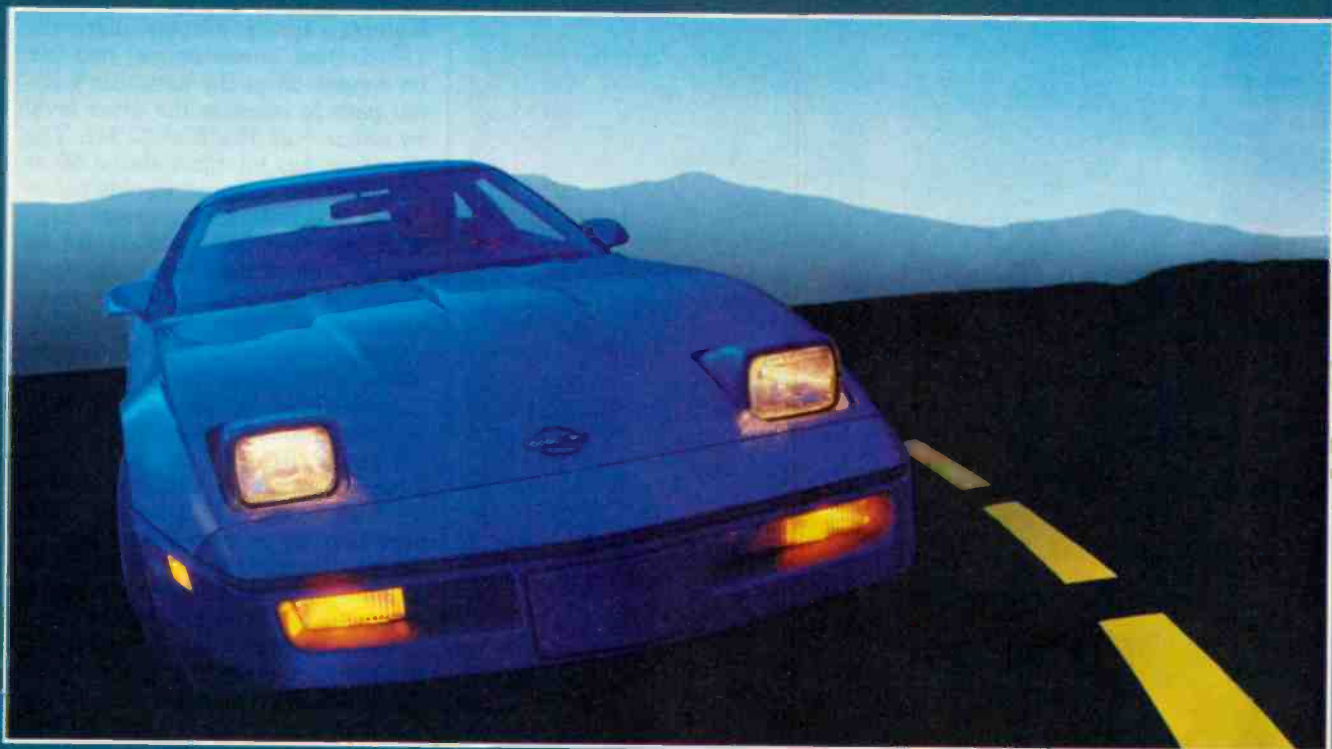
Comments

The DD-VR77's controls are generally well laid out and easy to use, though we would have preferred a slightly smaller pause button and a slightly larger stop button. The displays are also easy to read.

Sonically, we would rate the DD-VR77 as good. Its freedom from hiss was commendable, and the sound it captured and reproduced was wide in frequency range but slightly muddled (especially, to our ears, in the reverse mode) by residual wow-and-flutter. Few listeners of our acquaintance are quite as sensitive to this particular fault as we are, however, so you must listen and judge for yourself. If autoreverse is high on your list of priorities, the JVC DD-VR77 is well worth consideration.

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CERWIN-VEGA 250SE SPEAKER SYSTEM

Julian Hirsch, Hirsch-Houck Laboratories

CERWIN-VEGA, best known for musical-instrument and sound-reinforcement speakers, recently introduced a line of five speaker systems for the home market. Called the Select Edition Series, the speakers combine the smooth response and wide dispersion of home hi-fi speaker designs with the high power-handling capability and high sensitivity of professional models.

The Model 250SE, at the midpoint of the Select Edition 200 Series, is a floor-standing three-way system based on a 10-inch woofer operating in a vented enclosure (the vent opening is in the rear of the

cabinet). The nominal system impedance is 6 ohms, and the rated frequency response is 32 to 20,000 Hz \pm 3 dB. The system's sensitivity is specified as 95 dB sound-pressure level (SPL) at 1 meter with a 1-watt input. At 550 Hz, there is a 12-dB-per-octave crossover to a 6-inch cone midrange driver, and at 3,500 Hz there is a similar crossover to a 1-inch dome tweeter.

The tweeter's voice coil is both cooled and damped by a silicone compound, and its dome is loaded by a horn that Cerwin-Vega calls an Elliptical Acoustical Transformer. While any horn can be described as an acoustical transformer, this one

has an elliptical cross section (with the longer axis oriented horizontally) that is said to give it better directional properties than those of a dome radiator alone.

Although it is not a part of the 250SE, or required for its proper operation, Cerwin-Vega also manufactures a special bass equalizer, the DB-10 Bass Turbocharger, that can be connected in the amplifier's signal path to increase the drive level by either 5 or 10 dB at 32 Hz. The equalizer has no effect above 60 or 70 Hz and attenuates signals below 20 Hz. It is intended to restore deep-bass response to speakers whose output falls off below 40 Hz or so (a category that includes most home speakers).

Removing the 250SE's black grille cloth, which is retained by sturdy plastic snaps, reveals the drivers and two knobs for adjusting the levels of the high-frequency and midrange drivers. The cabinet measures 28 inches high, 12½ inches wide, and 11½ inches deep (including the integral pedestal base), and it has a black woodgrain-vinyl finish with a black flocked covering on the front panel. The rear contains the spring-loaded speaker-wire connectors. Each speaker weighs about 35 pounds. Price: \$300 each; DB-10 Bass Turbocharger, \$49.95. Cerwin-Vega, Dept. SR, 12250 Montague St., Arleta, CA 91331.

Lab Tests

We experimented with several combinations of control settings when measuring the room response of the Cerwin-Vega 250SE's. The flattest response was obtained with the high-frequency control set at its minimum and the midrange control at its midpoint, so these settings were used throughout our subsequent measurements.

When we combined the room response with the close-miked woofer response, the composite frequency-response curve of the 250SE was flat within 7.5 dB from 24 to 15,000 Hz. Although the response shape could be altered to suit almost any taste with the speaker's controls, the high-frequency output dropped rapidly above 15,000 Hz. Our quasi-anechoic FFT response measurements confirmed the general nature of the response curve, including the

If you can't afford it, spare yourself the heartache of listening to it.

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A few of the features found in the HPL 540 shown here are: Dolby B and C noise reduction systems, tuner/tape switch, tape search, and the smooth convenience of full logic tape controls. The ergonomic design insures easy operation of all functions.

One listen to all of this and you will be exhilarated, and if you've read this far you are no longer blissfully unaware. Your taste has been improved. If you can afford it, you already deserve, and probably demand the best in design, engineering and of course—uncompromising performance.



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TEST REPORTS

high-frequency rolloff above 15,000 Hz. It also showed a periodic response variation, with peaks occurring at intervals of about 1,500 Hz over the entire frequency range. This characteristic was also visible on the FFT response plots supplied by the manufacturer. It was not apparent in the room-response curves, however.

The difference in frequency response between the on-axis and 45-degree off-axis measurements was less than 6 dB over the full range up to about 15,000 Hz. The phase linearity of the system was good, with an overall group-delay variation of about 0.4 millisecond from about 500 Hz to beyond 20,000 Hz.

The system's sensitivity measured 93 dB at 1 meter with an input of 2.83 volts (1 watt) at 1,000 Hz. The impedance reached a maximum of 25 ohms at the bass-resonance frequency, 63 Hz, and a minimum of 4 ohms at 32 and 130 Hz. At frequencies above 600 Hz it was between 10 and 15 ohms. The bass distortion (measured at a drive level of 2 volts, corresponding to a midrange output of 90 dB SPL) was about 0.7 percent from 100 to 70 Hz, rising to 2 percent at 50 Hz and 3 percent at 40 Hz. Although we were not specifically testing the DB-10 bass equalizer, we did measure its frequency response and confirmed that it essentially matched the manufacturer's claims (a boost of 9 dB at 32 Hz or 4 dB at 35 Hz, less than a 0.5-dB effect above 100 Hz, and a cut of 3 dB at 20 Hz).

During our pulse-power tests, the 250SE's woofer "bottomed" with a loud rasp at 100 Hz with an input of 100 watts into its 4.3-ohm impedance. At 1,000 Hz, the amplifier clipped at 240 watts into the speaker's 15-ohm impedance, and at 10,000 Hz it clipped at 270 watts into 15 ohms.

Comments

As received, the Cerwin-Vega 250SE speakers had their level controls set to their maximum limits. Lacking any instructions or suggestions for their adjustment, we initially listened to the speakers at these settings. The sound quality was very bright and "forward," but it was greatly improved when we reduced both control settings.

Because of the variable midrange and treble response adjustments, it is difficult to describe *the* frequency response of the Cerwin-Vega 250SE. Within wide limits, it can have almost any response you wish it to have if you have the patience to experiment with the control settings. Although our test settings yielded the flattest measured response, the resulting sound was too subdued for our taste, and we eventually increased the treble control to its midpoint and the midrange to its maximum. To our ears the sound was much improved, but obviously each user will have to establish his own preferred settings.

The speakers sounded good, although we noted a tendency toward a "forward" character, presumably from a midrange emphasis. This effect was strongly program-dependent and was most noticeable in A/B comparisons with other speakers we knew to be flat throughout the middle and high frequencies.

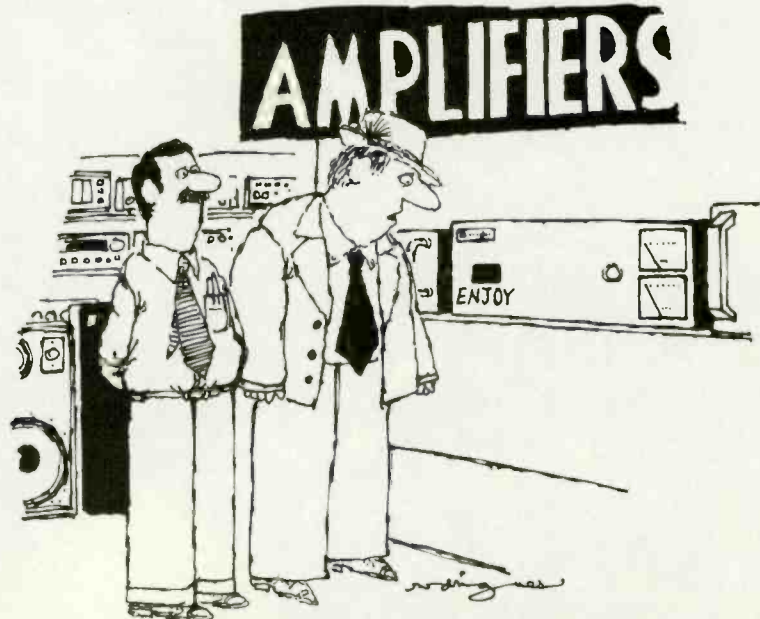
We connected the DB-10 equalizer to our playback system and found, as we expected, that it had no audible effect on most program material. Only the deepest bass frequencies are boosted by this device, and such frequencies (under 40 or 50 Hz) are rare in most recorded music. When these frequencies were

present, however, the effect was clearly audible.

The woofer of the 250SE was the only one of its drivers that we were able to drive into nonlinearity on musical program material with our amplifier (the 15-ohm impedance of the midrange and high-frequency drivers is not ideal for drawing high power from a transistor amplifier). We could hear the onset of a woofer-suspension rattle while playing a recording of bass drums at a high volume with the DB-10 set to a 10-dB boost, and sometimes at the 5-dB setting, but not when the equalization was switched out.

Like almost any product, the Cerwin-Vega 250SE must be viewed in the context of its price. These days, \$300 speakers are often small-to-moderate-sized bookshelf units, whereas the 250SE is a husky floor-standing system that is considerably more muscular than most speakers in its price range. In addition, its high sensitivity makes it usable with amplifiers having one-quarter the rated power output that would be needed for a typical small speaker selling at a comparable price. If you take the time to adjust the balance controls to your taste, the 250SE can be a very cost-effective addition to your system.

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HOW TO BUY LOUDSPEAKERS

by William Burton

S Ten tips on choosing the speakers most compatible with your equipment, your room, and your tastes

PEAKERS take power from a receiver or amplifier and turn that electrical energy into acoustical energy, otherwise known as sound. This is easy to do, but not so easy to do well. Speaker designers strive toward at least two goals: the illusion of musical reality and the accurate transduction of the audio signal. Speakers embodying the first ideal would create the illusion that the music is being performed live in the listening

room. Speakers embodying the second ideal would put out an exact copy of what went in—an acoustic waveform that is an exact analog of the electrical waveform.

Most speakers are not very close to either ideal. In fact, the sonic performance of speakers varies more than any other type of component. They have personalities, and their characters change according to where they are placed in a room (see the article on speaker placement on

page 61). Here are a few tips to help you choose speakers that are compatible with your music, your amplifier, your room, and your ears.

1 Listen to live music. Unless you only listen to recordings of sound effects, thunderstorms, crashing waves, or crashing bores, your speakers will probably reproduce music. To judge how well they do that, listen to music as it is being produced.





Listen seriously at live concerts. The sound of the instruments will be affected by the concert hall, so don't expect to get the big sound of big spaces in a small room, even with superb speakers. Do listen for the qualities that good speakers can reproduce, such as:

—*Smooth frequency response.* Each part of the music, from bass to countertenor, is at just the right volume, with no part slighted or exaggerated.

—*Extended frequency range.* There are low lows that you can feel as well as hear, and the high highs are pure, clear, and shimmering.

—*Precise imaging.* You can close your eyes and tell where the sound is coming from.

—*Accurate transients.* The changes from soft to loud are powerful and clean.

You can listen for the same characteristics of live sound at a rock concert as at a chamber recital. Of course, the sound of electric instruments comes through their amplifiers and some sort of speakers or PA system, so you must consider that in relation to imaging.

Both electric and acoustic music will sound great through great

speakers. In fact, considering the awful sound systems and horrendous acoustics at some rock concerts, electric music can sound *better* in your living room than in live performance.

2 Listen to good speakers. Remember how good live music sounded in the concerts you went to? Judge speakers by how closely they come to this ideal. Do they give you the thrills and chills of live music? Good speakers should not slight or exaggerate any part of the frequency range. They will reproduce a delicate pianissimo in the lower octaves at just the same level as a delicate pianissimo in the upper octaves. They will make a piano sound exactly as forte as it should from its lowest octave to its highest. Good speakers are a reference that you may be able to use more easily than a live concert.

Speakers vary according to the goals of the designer. Some designs are based on principles of time and phase coherence. Some designs are completely incoherent. Some speakers direct the sound straight at the listeners. Some bounce sound off the walls. Speakers may have one,

two, three, or more drivers in sealed, open, or passively radiating cabinets. Most are wood boxes, but some are flat panels or other unusual shapes. Designers may have to compromise between accuracy and efficiency, or size and bass response, or cost and quality. Remember, however, that the design is only as good as the result. The proof of the design is in the listening.

3 Read about speakers. Different kinds of speakers may be better at doing different things. Bass-reflex (ported) speakers tend to be efficient, making a lot of sound with only a little power, but they may sound boomy. Acoustic-suspension (sealed) speakers tend to be less efficient, but they often have tight and accurate bass. Large, flat speakers such as electrostatics may have superb imaging, but they are sometimes weak in the bass department. Knowing such juicy tidbits can help you narrow the range of speakers you have to choose from.

To learn about the different kinds of speakers, keep reading STEREO REVIEW and other audio publications, and refer to reference works on audio and acoustics. Reading

NORAH MARTIN



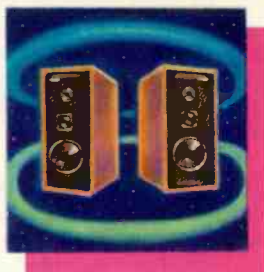
test reports can lead you to particular speakers that may be right for you, and they will also teach you about the theory and practice of speaker design.

4 Consider your receiver or amplifier. If you are buying speakers for a receiver or amp you already own, find out how many watts per channel it delivers. This information should be in your owners' manual or on the rear of the unit, or you can look it up in *STEREO REVIEW's Stereo Buyers' Guide*. Look for speakers that will work with the power you have.

Don't buy a speaker that won't go as loud as you want with the electronics you have. And don't buy a speaker that might melt down if you crank the volume up on your monster amp. The amount of power a speaker needs can be indicated in two ways. The manufacturer may say something like, "These speakers should be used with amplifiers delivering between 35 and 100 watts per channel." Also, the sensitivity specification will tell you how loud the speaker will play when 1 watt of power is put into it. A sensitivity spec might look like this: "83 dB SPL/W/m." Translated, this means that the speaker will produce a sound-pressure level of 83 decibels 1 meter away from the speaker with 1 watt of input power.

5 Consider your listening room. Big speakers are better for big rooms, and small speakers are better for small rooms, but you can let your taste, budget, and decorating sense be your guides. For the same playback volume, large rooms require more powerful amplification or more efficient speakers than small rooms. Make sure, however, that the amp/speaker combination can produce the volume you want in your listening room without distortion. You can rarely have too much power, and your speakers can never be too efficient.

Speakers sound different in different locations. Walls, floors, and ceilings reflect and reinforce sound, especially low-frequency sound, so putting a speaker against a wall or in a corner will exaggerate the bass. Think about where the speakers can go, and buy speakers that work in those locations. For example, some speakers are designed to bounce sound off rear and side walls—if



your rear wall absorbs sound because of draperies, books, or soft furnishings, you won't get the desired effects.

6 Take your favorite music shopping. Choose music you are familiar with. Vocals are good because the human voice is the musical instrument that you hear most often. If you can't bring your own recordings, use singing or speaking voices. Male voices often sound boomy on poor speakers. (These speakers exaggerate mid-bass to hide a lack of low bass.) I recommend acoustic rather than electric music because acoustic instruments are more consistent in their sound quality.

Don't limit yourself to classical music: folk or acoustic jazz can be excellent. If you do prefer classical, remember that small ensembles sound more natural than full orchestras in small rooms. Schubert's Piano Trio No. 1, in B-flat Major, Op. 99 (performed by the Borodin Trio on Chandos) is my most recent favorite for evaluating speakers. My bass-response and dynamic-range test is *The Cinema Show* from the live Genesis album "Seconds Out." The albums "The Roches" and "Rickie Lee Jones" also have wide frequency range and gorgeous sound.

7 Listen at the store. Ask your salesperson to match the levels of each pair of speakers you listen to, using a tuner or receiver tuned to the noise between FM stations. Make the speakers the only variable: use the same source material, the same amplifier, and the same kind of placement for each pair.

To reduce confusion, compare only two speaker systems at a time. Decide which one you like best, and then compare the winner with the next pair. Ask a lot of questions and listen to the answers.

8 Be aware of how you hear. The ear is a marvelously sensitive organ,

but ears—or, rather, the brain—can be fooled. For example, louder speakers usually sound better. To distinguish fine differences, switch quickly from one speaker pair to the other and back again. Hearing one pair in the morning and another pair in the afternoon is not the best way to compare. Acoustic memory is too short. Differences from one room to another, or between sources, may seem to be differences between speakers.

9 Consider three-piece systems.

A three-piece system consists of a subwoofer for the low frequencies (usually below 200 Hz) and two satellite speakers for the higher frequencies. To split the signal, a crossover network must be provided in the subwoofer or separately. Like any speaker, subwoofers require power—and because they move a lot of air, they need a lot of power. If your amp is underpowered, you can upgrade it, or you can get a subwoofer with a power amp built in. There are three ways you can buy a three-piece system:

—You can buy a matched system consisting of a subwoofer and two satellites from the same maker.

—You can buy a subwoofer from one manufacturer and another brand of speakers to use as satellites. You will have to provide for a crossover network separately if one is not built into the subwoofer, and the crossover frequency should be adjustable so that the subwoofer blends smoothly with the satellites. For the same reason, make sure the subwoofer has a level control.

—You can buy a pair of full-range speakers now and add a subwoofer later. The cautions mentioned above must still be observed, of course.

10 Damn the torpedoes. You're buying these speakers for *your* ears. Don't let anybody else's prejudices decide what you will hear. If you like the sound of a speaker, buy it. If a salesperson won't match levels so you can compare speakers, go to a store with more helpful and better informed salespeople. Don't be talked into price ranges that make your head spin either. Inexpensive speakers can sound surprisingly musical. They won't make you believe you're at a live concert, but they can do a good job of reproducing the sound of music. □



SPEAKER PLACEMENT

Understanding the fundamentals
of room acoustics

BY LARRY KLEIN

AFTER countless hours of critical listening in a variety of hi-fi showrooms, you have finally found the loudspeaker of your dreams. It delivers the transparent, airy treble, the solid low bass, and the wide, natural stereo image that you've been looking for. You cheerfully write your check, take delivery, set up the systems in your listening room, turn up the music, and . . . disappointment strikes! Your new and expensive speakers sound only marginally better than the ones they replaced. What has gone wrong?

Although there's a slight chance that your new speakers are defective, the most likely source of your difficulty is *not* the speakers themselves, but rather their placement and the acoustic properties of your listening room.

The Highs

Sound is very much like light in that it can be reflected, diffused, and absorbed. The sound produced by loudspeakers—or any other sound

source—is reflected by hard surfaces, diffused by irregular surfaces, and absorbed by soft surfaces. It follows from this that your interior decorating can dramatically influence the sound of your speakers. A very modern room with an abundance of acoustically reflective exposed floor areas and chrome, plastic, and glass furniture will reflect and reinforce the highs. Such an overly reflective room will sound

too bright, or even shrill or harsh. At the other extreme, a traditional room with heavy drapes, wall-to-wall carpeting, and overstuffed furniture may cause music to sound dull and muffled because the higher frequencies are soaked up by the furnishings. Most rooms fall between the two extremes, and only minor adjustments are required to achieve a good frequency balance.

The Lows

Although speaker placement to some degree affects all the frequencies radiated into a room, it most strongly influences the lower frequencies. The unwanted effects occur in two different ways and in two different bass-frequency areas.

Short-wavelength sonic reflections from *nearby* wall and floor surfaces cancel or reinforce (depending on their phase) the speaker's direct sound in the upper bass. Most speakers will show response irregularities in the 200- to 400-Hz range unless special care is taken in their installation (and design).

IDEAL LISTENING ROOMS

	Height	Width	Depth
Small Room			
Ratio	1	1.25	1.6
Dimensions	8'	10'	12'9"
Average Room			
Ratio	1	1.6	2.5
Dimensions	8'	12'9"	20'
Large Room			
Ratio	1	1.25	3.2
Dimensions	8'	10'	25'6"



Your listening area should be roughly equidistant from both speakers.

The longer (lower-frequency) wavelengths are very much affected by room *dimensions*. Room nodes, or standing waves, occur at frequencies whose wavelengths are twice a room's dimension. Standing waves cause the low bass to be unnaturally emphasized or de-emphasized in certain areas of the room. Since such nodes can't be eliminated, it's best to distribute them as evenly as possible to ensure a smooth spread of bass frequencies throughout the room. If you have the option, you can help achieve this by avoiding having any of the room dimensions (height, width, and depth) the same as or a multiple of another.

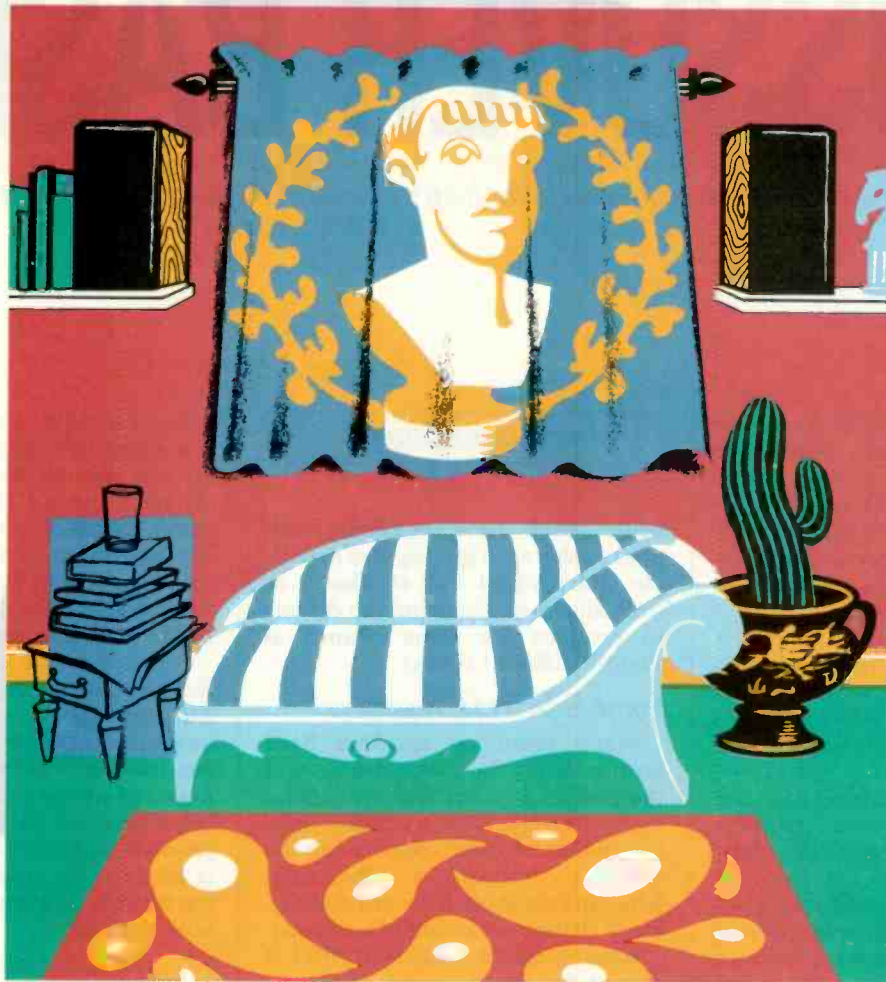
The preferred ratios for well-distributed room nodes are shown in the chart on the preceding page. Also shown are the ideal room widths and depths for a standard 8-foot ceiling.

If you are troubled by standing waves and can't change the dimensions of your listening room, your only recourse is to avoid placing your listening chair, or your speakers, in a standing-wave peak or null area. In respect to room bass response, there's a reciprocal relationship between the locations of the speakers and the listener. In other words, if you were to place a speaker in your listening chair and listen at the speaker's normal location, you would hear the same level of bass response. So if the bass sounds too heavy, relocate your listening area away from the wall; if it's too light, move your chair closer to or against the wall.

Proper Balance

What is the proper frequency balance in a home hi-fi system? Some people will tell you that it's all a

matter of taste. Certain listeners prefer a "bright" sound that emphasizes the high frequencies, while others go for a more mellow tonal quality with a preponderance of mid bass. Aside from the taste of any particular listener, the ideal speaker has a "flat" response in which every musical frequency is given equal treatment. That does not mean that all notes will be amplified to the same level; it simply means that the original relative strengths of the highs and lows will be preserved. This is important because the ear translates small differences in tonal *balance* into large differences in tonal *quality* and coloration. Here are some tips on speaker and furniture placement that can help you achieve the best balance from your speakers—and perhaps lead you to a new appreciation of their sound potential.



A soft wall hanging between shelf systems will soak up excess highs.

□ Speakers almost always sound best when they are installed on the long wall of a room, from 6 to 10 feet apart and equidistant from the two room corners. If there seems to be a sonic "hole" between the two speakers, move them closer together; if the stereo stage is too narrow, move them further apart. The imaging of some speakers seems to improve when they are angled in slightly toward the center of your listening area.

□ Your listening area should be roughly equidistant from both speakers, with the distance between your chair and the speakers about one and a half times the spacing between the speakers. Although your amplifier's balance control can compensate somewhat for off-center listening, stereo imaging may suffer.

□ Never position "bookshelf"

speakers directly on the floor or hide them behind a couch or chair. Speakers must have a direct line to the listener's ears. The stereo perspective will sound more natural if the speaker is at ear level—the seated ear, that is. Bookshelf speakers installed on the floor usually sound dull and muddy.

□ The closer a speaker is installed to a wall or a room boundary (where walls meet each other or where a wall meets the floor or ceiling), the more bass it will produce. Too much bass, however, can easily overbalance the midrange and treble frequencies and muddy the sound.

□ If you can install your speakers 2 or 3 feet or so away from *any* wall (including the rear wall), they will probably deliver a greater sense of openness and clarity in addition to improved stereo imaging.

□ If the stereo image seems blurred, imprecise, and lacking depth, there may be excessive mid- and upper-frequency reflections in the speaker's mounting area. A soft wall hanging placed between shelf-mounted systems or an upholstered couch and a rug placed between floor-mounted systems will soak up the excessive highs.

With the help of these tips, and some understanding of the acoustic principles involved, you should be able to arrange your speakers and your listening room for best results. But as the professional acousticians who worked at Lincoln Center found, a great deal of trial and error is almost always necessary to achieve optimum results. You should expect no less when adjusting the acoustic performance of your own private concert hall. □



CROSSOVER BASICS

Knowing crossover characteristics can help you predict a speaker system's sound

IT'S hard to know what a speaker sounds like without hearing it. You can get some idea if you know something about its drivers. For example, a big speaker with two 15-inch woofers is likely to have better bass than a small speaker with one 6-inch woofer.

Drivers aren't the only parts in a speaker, however. When a speaker has different drivers to handle different parts of the frequency range, something else is necessary—a *crossover network*.

A crossover network divides the audio signal coming from a receiver or amplifier and sends the right parts of it to the right drivers. In a three-way speaker, it sends the lows to a woofer, middle frequencies to a midrange, and highs to a tweeter (see Figure 1). To know what frequencies each driver handles, you have to know the speaker system's *crossover frequencies*—the point(s) at which a rising or falling note will *cross over* from one driver to another. In addition to crossover frequency, other important features of crossover networks are the rate and shape of its attenuation *slopes*, which determine how the frequencies fade out from one driver and fade in to the next.

Because crossovers are designed for specific drivers in multiway speakers, they are usually built into each speaker. But they can also be purchased as separate components, especially for three-piece satellite/subwoofer systems or for biamplified and triamplified systems.

Whether a crossover comes with the speaker or is separate, knowing its characteristics can tell you something about the speaker's sound before you hear it. Different types of crossovers have different advantages and disadvantages. Some are hard on drivers (making them handle a wide range of frequencies),

by Richard Chinn

while others have problems with phase coherence (giving two drivers the same signal out of phase) or time alignment (causing the drivers to produce the same sounds at slightly different times).

Sonic Effects of Crossovers

Many multiway speakers have level controls for the midrange and the tweeter that act like broadband tone controls. The so-called *turn-over points* of these controls are the crossover frequencies. Obviously, adjusting these controls can dramatically change the sound of a speaker.

A more subtle crossover effect is caused by the different distortion characteristics of different drivers. A crossover frequency that is too low or too high can send signals to a driver that it can't reproduce without distortion, and this distortion will get worse at higher volumes.

The amount of overlap a crossover network allows between drivers—that is, when a signal is reproduced by two drivers because its frequency is in the high part of one driver's range and in the low part of the other's—can also make a difference in the system's sound. Some speakers, such as those made by Bose, are touted for their large overlap (nearly an octave in the Bose 601 III's), while others, such as the JSE Infinite Slopes, are touted for their minimal overlap (with slopes over 100 dB per octave).

Crossovers and Drivers

Typically, there is a crossover output for each driver in a speaker. Since the limiting factor is driver capability, a speaker designer's selection of drivers dictates his choice of crossover frequencies.

For example, sending too much low-frequency energy to a tweeter is an easy way to send the tweeter to an early grave. The tweeter can't move far enough to reproduce very low-bass frequencies. And even if it could survive that much motion, its voice coil will burn out first because of the excessive energy levels.

Another driver limitation that affects crossover design is how evenly a driver disperses sound. If a woofer has wide dispersion and a tweeter has narrow dispersion, the speaker may sound weird and "beamy." If the dispersion patterns of the drivers don't match well, stereo imaging is likely to be lousy, especially for the overlap frequencies produced by both drivers.

How Crossovers Work

A crossover network is nothing more than a collection of electrical filters. A two-way speaker needs a *highpass* filter to pass highs to the tweeter while holding back the lows and a *lowpass* filter to pass lows to the woofer while holding back the highs. A three-way speaker will also need a *bandpass* filter to pass the middle frequencies to the midrange driver while holding back both the highs and the lows.

Figure 2 shows the output curves of the filters in a typical three-way crossover network. Notice how the lowpass filter lets the low frequencies, up to about 200 Hz, go through untouched while reducing the level of the higher frequencies, so that a note at, say, 4,000 Hz reaches the woofer at a level about 24 dB lower than a bass note. As the frequency increases, the output level from this filter steadily decreases.

The highpass filter works the opposite way, allowing its output level to increase as the frequency increases until about 10,000 Hz, above which it passes the high-fre-



frequency signals to the tweeter unchanged. In the middle of the network, the bandpass filter attenuates both lows and highs while leaving middle frequencies unchanged.

A system's crossover frequencies are determined by the *cutoff frequencies* of its crossover filters, which are the points at which their output level is 3 dB below the maximum output (which would produce a sound only half as loud). Signals beyond the cutoff frequency—above it for a lowpass filter, below it for a highpass filter, and either way for a bandpass filter, which has two cutoff frequencies—are still allowed to go through, but at a decreasing level as the frequency changes.

In Figure 2, the cutoff frequency of the lowpass filter and the lower cutoff of the bandpass filter are just over 400 Hz, while the upper bandpass cutoff and the highpass cutoff are just over 4,000 Hz. These two points, therefore, are the crossover frequencies of the speaker system.

Crossover Types

Ideally, the acoustic output of a speaker with more than one driver should be the same as the output of a speaker with just one perfect full-range driver. In practice, however, it is difficult to make different drivers work together in perfect harmony. The speaker's designer must choose the right crossover frequencies as well as the right shapes and rolloff rates for the filter slopes if the system is going to sound anything like the ideal.

A crossover filter's characteristics are described mathematically in an equation that represents a curve like those in Figures 2 through 6. Filter curves have three parts: the *passband* section, which is where the curve is level (or flat) because the filter is passing all signals in that frequency range; the *stopband* section, which is the part of the curve beyond the cutoff point that appears as a straight line with a certain constant angle, or slope; and the *transition region* between the passband and the stopband, which is the part that is truly curved.

The slope of a filter is the *rate* at which it rolls off, or attenuates, its output beyond the cutoff point given a constant-level input. It is usually expressed in decibels per octave, and for mathematical reasons the figures are almost always multiples of six. As the slope of a filter gets steeper and steeper, it approaches the ideal limit of a so-called "brick-

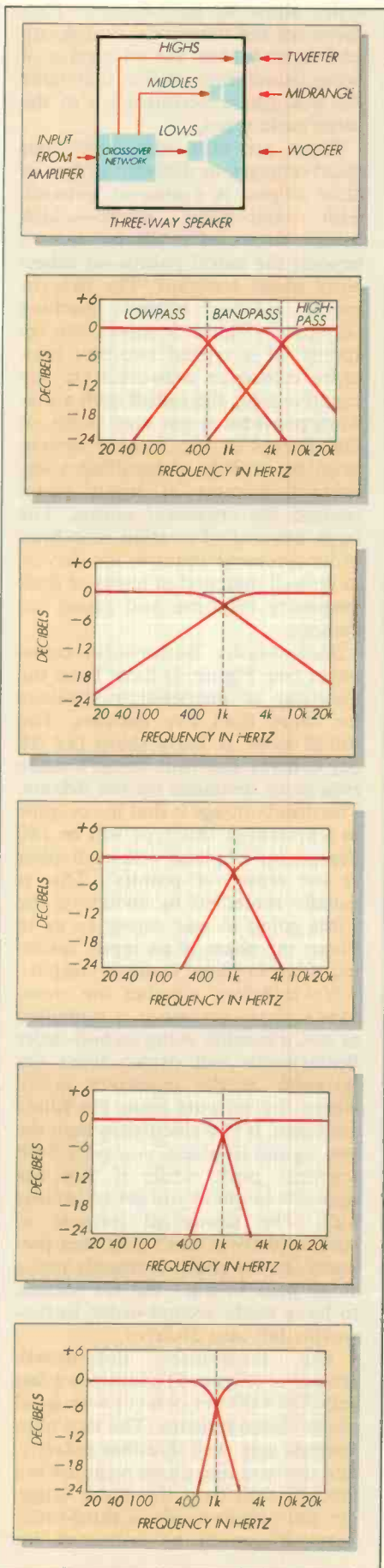


Figure 1. The crossover network in a three-way speaker system needs three filters: a highpass filter to send the high frequencies to the tweeter, a bandpass filter to send the middle frequencies to the midrange driver, and a lowpass filter to send the bass frequencies to the woofer. Different types of crossovers will provide more or less overlap between the signals sent to drivers in adjacent ranges.

Figure 2. Response curve for the crossover network in a typical three-way system. Each of the three filters lets a certain range of frequencies pass through to its associated driver unaltered while rolling off the unwanted frequencies beyond its range. The crossover points for the system are where the filter outputs are 3 dB down from their maximum levels.

Figure 3. Response of a first-order crossover for a two-way system. The slope beyond the crossover point is a gentle 6 dB per octave, creating a wide overlap in the frequency ranges sent to each driver.

Figure 4. Response of a two-way, second-order Butterworth crossover. The rolloff slope is 12 dB per octave.

Figure 5. Response of a two-way, third-order Butterworth crossover, with a slope of 18 dB per octave.

Figure 6. Response of a two-way, fourth-order Linkwitz-Riley crossover. In this special case of a Butterworth crossover, the rolloff curve is sharper and the crossover point is at -6 dB instead of the usual -3 dB. Beyond the crossover point, the slope is the same 24 dB per octave as with any fourth-order filter.



wall filter," in which the attenuation is so sharp that the curve representing it seems to drop straight down from the passband like a wall.

Crossover slopes are also sometimes described as being of a certain *order*, namely, the mathematical order of the equation describing the filter. To convert the order of a crossover into a decibel-per-octave slope, simply multiply the number of the order by six. Thus, a *second-order* crossover has a filter slope of 12 dB per octave, and a *third-order* crossover has a slope of 18 dB per octave.

Just as important in characterizing a crossover as its filter slope (or order) is the shape of the crucial transition region between the passband and the stopband. The equations defining these curves are called *transfer functions*, and the different types are named after the mathematicians who identified them. The filters most commonly used for speaker crossovers are described, respectively, by *Butterworth*, *Chebyshev*, *Bessel*, and *Linkwitz-Riley* transfer functions (the last being a special case of the Butterworth type). Each function can be of any order, but only the first through fourth orders are commonly used for audio filters, and even among these only a few of the possible combinations are practical for speaker crossovers.

Design Tradeoffs

The various types and orders of crossover filters have different characteristics in practice, and these present advantages and disadvantages to the designer of a speaker's crossover network. For instance, Butterworth filters have the flattest passband response of the three main types. That is, the frequencies that should be passed through to the driver unchanged are least affected by going through the filter circuit.

Chebyshev filters, on the other hand, have the advantage of rolling off faster than Butterworth filters with the same slope. That is, the transition from the passband to the stopband is sharper. The disadvantage is that the frequency response of Chebyshev filters is not as flat in the passband as that of Butterworth filters, and for this reason they are not used very often.

Bessel filters do not roll off as fast as either Butterworth or Chebyshev filters, which means that in most speaker crossovers a Bessel filter would have to have at least a fourth-

order slope to be effective. That increases the network's complexity and expense, but the advantage of using Bessel filters is that they have the best phase performance of the three basic types.

There are also advantages and disadvantages to different orders of filter slopes. A crossover network with first-order filters—which means slopes of 6 dB per octave beyond the cutoff points—is inherently phase coherent. The two (or more) crossover outputs combine perfectly. (Figure 3 shows the response of a typical two-way first-order crossover network.) On the negative side, the rolloff such a network provides is not very sharp, so the drivers in the speaker system must be capable of handling a significant amount of input signal beyond the crossover points. The large amount of overlap in a first-order crossover requires the drivers to be well matched in terms of their frequency response and phase coherence.

Second-order Butterworth crossovers (see Figure 4) have been the mainstay of theater-style speakers for more than five decades. The rolloff slope is fairly sharp (12 dB per octave) and thus doesn't make ridiculous demands on the drivers. The disadvantage is that the outputs in a system of this type will be 180 degrees out of phase with each other at the crossover point(s). This is usually remedied by switching the wires going to one driver so as to invert the phase of its input, resulting in an in-phase acoustic output.

Nevertheless, whether the crossover's phase inversion is remedied or not, a speaker using second-order Butterworth will depart from flat response at the crossover point, where the outputs from the filters are equal. If you electrically sum the two signals in phase, you get a 3-dB response peak, while if they are opposite in phase you get an infinite null. The acoustical outputs of speaker drivers don't sum that precisely, so the result is usually just a small peak or dip—but it's enough to have made second-order Butterworths fall into disfavor.

The third-order Butterworth crossover (Figure 5) combines a fast rolloff (18 dB per octave) with good phase characteristics. The two filter outputs sum well in either polarity, and the resulting phase response is a gradual shift over the audio range. On the negative side, a third-order network cannot be corrected for

speaker time-offset effects (when the drivers are not aligned in the same acoustic plane) by using a time-delay circuit.

The fourth-order Butterworth crossover suffers from the same problem as the second-order Butterworth: the outputs are 180 degrees out of phase at the crossover points. The 24-dB-per-octave slope of a fourth-order filter greatly minimizes interaction between the drivers in the crossover region, but this advantage is overshadowed by the large phase shift. Moreover, while the types of crossover previously discussed can all use passive (unamplified) filters, the complexity of a fourth-order network makes it economically impractical to produce a passive design.

A special case of the fourth-order Butterworth crossover is the fourth-order Linkwitz-Riley crossover (Figure 6). Again, its slope is 24 dB per octave, but the outputs of the individual filters are down 6 dB at the crossover point, instead of the standard 3 dB. Although the crossover point is 3 dB lower, this does not cause an audible dip in the frequency response because of the phase characteristics of the two drivers.

Simple in concept and elegant in performance, the fourth-order Linkwitz-Riley offers the best set of compromises of all the designs we've discussed. Its outputs sum neatly for a flat frequency response, they are in phase at the crossover frequency, and their phase relationship permits time correction for drivers that are not in the same acoustic plane. The third-order Butterworth and the fourth-order Linkwitz-Riley are the filters of choice for most speaker crossovers, although some first-order filters are still being used in inexpensive speakers for reasons of economy.

Whatever type of crossover is used in a speaker system, the success of the overall design can only be judged by listening to how the speaker sounds. Any speaker design represents various tradeoffs. Understanding the basics of crossovers, however, will help you to narrow your selection to the speakers that are most likely to satisfy your listening tastes, budget, and system requirements. □

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SHOW STOPPERS

by Michael Smolen

The big news from Linn was the introduction of an affordable turntable that approaches the same kind of performance as the renowned Linn Sondek LP12. The Linn Axis has such advanced features as a twenty-four-pole AC synchronous motor with special load-sensing circuitry, low-distortion Class A amps driving each motor phase, and electronic switching. Price: \$575, with Linn Basik LVX tonearm.

The MAN (Maloney & Nusinow) MP-1 preamplifier (left) and MA-1 power amplifier were among the most striking products at SCES, and well deserving of their Design and Engineering awards. MAN claims that the MP-1 has no aural character at all, and that the MA-1 mono tube amp is aurally undetectable except for pure gain. Price: MP-1, \$2,000; MA-1, \$3,500 per pair.

THE consumer electronics industry grows and changes its shape every few months. Last April we told you about a number of special products introduced in Las Vegas at the Winter Consumer Electronics Show, products that were noteworthy for technology or design. These "show stoppers," as we call them, included CD changers for the car, optically coupled CD players, FMX tuners, and even prototypes of such things as digital audio tape (DAT) decks. Now, only six months later, some of the prototypes have become real products, and there were new show stoppers to take their places at the Summer CES in Chicago.

The ones we liked best are shown here. The Chicago show was also stopped by Sony's two working R-DAT decks (one for home, one for car). The electronics for these units were still in a footlocker, but you can expect salable DAT machines from Sony, Sharp, and Onkyo in Japan in October and in the United States in early 1987.

The controversial FMX stereo-FM system appeared in Tandberg's TR-3100, a 100-watt high-end re-

ceiver, and in a new receiver from NAD. Allison added a variation on the theme of sound-field manipulation used by dbx and Polk with the new Model 10 speaker, which does its signal processing onboard instead of outboard. Polk also launched its new SDA-SRS2, a smaller version of the SDA-SRS with silver-coated tweeters and a one-piece v-groove cabinet.

Other noteworthy products were AR's new MGC-2 loudspeaker, Clearaudio's tiny preamp/equalizer that attaches directly to a moving-coil cartridge, Celestion's thunderous new subwoofer, B&W's revolutionary new Matrix speakers, and ADC's new CD player with advanced error-correction circuitry.

It was an excellent show, and there were certainly more interesting new products than the sampling we show on the next few pages. Some of them will be tested by Hirsch-Houck Labs, and others will be described in the "New Products" pages of forthcoming issues. Then there will be another Consumer Electronics Show in Las Vegas next winter, and you can be sure that we'll be there to tell you which products stop that show.



Sony's CDP-C10 compact disc changer for home use comes with the same XA-10 disc magazine found in Sony's automotive DiscJockey. With up to ten discs available at any time a listener can enjoy over 10 hours of uninterrupted music, and the programming possibilities are virtually endless. Features include auto-pause, high-speed music search, multi-mode repeat, and an automatic music sensor (AMS). Price: \$799.95; extra disc magazines are \$19.95 each.



Acoustic Research introduced a new line of sleek, minimalist components headed by the Model X-10 receiver. With many of its less frequently used controls hidden behind a hinged front panel, the 100-watt X-10 features eight FM and eight AM radio presets, moving-magnet and moving-coil phono inputs, audio and video switching for two VCR's, and wireless remote control. Price: \$779.95.



Available in black as well as the traditional champagne finish, Harman Kardon's TD302 cassette deck further refines ultra-wideband design with Dolby HX Pro headroom-extension circuitry, low negative feedback, solenoid controls, a bias fine-trim control, an autorepeat function, and Dolby C noise reduction. Each deck comes with a frequency-response data sheet signed by the technician who performed the test. Price: \$430.



Nakamichi's CA-7A is billed as the "Ultimate Preamplifier." Its outstanding performance comes from features such as extensive internal shielding, independent toroidal power transformers for analog and digital circuits, optically coupled logic controls, relay-activated switching, a motor-driven volume control, acoustical fine-tuning controls, and a low-noise differential-FET moving-magnet preamp/equalizer. Price: \$2,195.



The Quad 306 power amplifier uses a refined version of the feedforward error-correction circuitry, called "Current Dumping," that was patented by the company in 1975. Rated at 50 watts (8 ohms), the amp can handle a variety of loads and has new protection circuitry featuring a sensor on the AC input side of the power supply. Price: \$595.



Aiwa unveiled a high-end car audio system, the CT-X50011, that adds even more anti-theft features to its STOP (Stereo Total Operations Panel) design concept introduced last year. The cassette radio has a removable chassis and a hideaway hinged front panel that houses a wireless remote control. Price: \$599.



Dubbed "The Amazing Loudspeaker," Carver's 6-foot-tall, flat-panel design is said to solve many of the problems encountered in both ribbon-array and conventional speakers. The speaker has a pure line-source ribbon driver (unbaffled to provide a dipole radiation pattern) that is rated for a flat response from 125 to 40,000 Hz. Bass frequencies below 125 Hz are handled by multiple uniform-drive planar subwoofer drivers, open to the rear. Price: \$1,700 per pair.



Many of last winter's prototype technologies showed up as real products at the Summer Consumer Electronics Show.



Show-stopping
components from
Carver, dbx,
Luxman, and Man
were recipients
of SCES Design
and Engineering
awards.



Meridian's Model 207 compact disc playing system is a fitting successor to the Pro-MCD. The player is constructed in two parts, one containing a custom-designed CD transport mechanism and the massive power supplies, the other containing all the decoding electronics, controls, D/A converters, and analog processors. Special electronic gain-control circuits allow direct connection of Meridian's active speakers. Additional features include inputs for a tuner and a tape deck and Pro-MCD-style equalization and error-monitoring lights. Price: about \$1,500.



Luxman's flagship integrated amplifier, the LV-105, incorporates a hybrid circuit design that combines FET's in the first amplifier stages, twin triode tubes in the driver stage, and high-current MOSFET semiconductors in the output stage, all said to lower its distortion significantly as compared with conventional amplifiers. The LV-105's specs include a power output of 80 watts into 8 ohms and a dynamic headroom greater than 2.9 dB. Price: \$800.



The dbx Soundfield 100 incorporates the Soundfield imaging technology of the revolutionary Soundfield 1, introduced in 1984, in a smaller cabinet at a considerably lower price. The dbx 100 is a three-way vented system with a 10-inch woofer, a 4½-inch midrange, and three ultrawide-dispersion ½-inch tweeters. The drivers are positioned in a left/right pair of asymmetrical 32-inch-high walnut-veneer cabinets. Price: \$899 per pair.

THE BASIC REPERTOIRE ON COMPACT DISC

Part I of a critical discography of symphonic music now on CD

by Richard Freed

THE standard works that make up the basic repertoire of American symphony orchestras have also been the best-selling classical recordings during the LP era. It is hardly necessary by now to catalog the advantages of the compact disc over the LP, and it is understandable that individual collectors as well as the recording companies themselves now focus prime attention on this new medium. The medium itself, however, is not an absolute guarantee of excellence. While most recordings—those from the early years of monophonic LP's as well as the most recent "true-digital" ones—sound better on CD than on LP or tape, there are some instances of the reverse.

The recommendations offered here are based on both musical and sonic considerations and constitute the first installment in a two-part, highly abbreviated survey of the basic orchestral repertoire currently available on CD. Handel's *Messiah* and Mahler's *Das Lied von der Erde*, though they predominantly involve singers, are certainly considered repertoire standards and have been added simply to round the picture out.

Record labels are spelled out for each of the respective manufacturers. One conspicuous abbreviation is "DG" for Deutsche Grammophon, a longish name that figures abundantly in the discussions and recommendations.

□ **BACH: *Brandenburg Concertos*.** The most all-round satisfying version of these six works, in any format, is the one by the English Concert under Trevor Pinnock, in DG's Archiv series. The concertos are available separately on 410 500-2 and 410 501-2 or with the four *Orchestral Suites* and the *Concerto for Flute, Violin, and Harpsichord* in a four-disc set (413 629-2). Christopher Hogwood and the Academy of Ancient Music give perhaps even more stimulating performances in their two-disc set on *L'Oiseau-Lyre* (414 187-2) but not of the standard *Brandenburgs*—what Hogwood offers are the "original versions," which differ in content and occasionally in instrumentation from the ones Bach finally presented to the Margrave of Brandenburg. Fascinating as a supplement to, but not as a substitute for, the standard versions.

□ **BARTÓK: *Concerto for Orchestra*.** Fritz Reiner's compellingly vivid performance with the Chicago Symphony

on RCA is still "the one." Coupled with Reiner's somewhat later recording of Bartók's *Music for Strings, Percussion, and Celesta*, the CD transfer (set for September release—no catalog number as of press time) is a great buy. Georg Solti's recording with the same orchestra is impressive too and comes with the *Dance Suite* (London 400 052-2). Antal Doráti's latest, with the Concertgebouw Orchestra, also emanates brilliance and authority, with *Deux Images* as the second work (Philips 411 132-2).

□ **BEETHOVEN: *Piano Concerto No. 5, in E-flat Major ("Emperor")*.** Claudio Arrau, in his remake with the Dresden State Orchestra under Colin Davis (Philips 416 215-2), brings a lifetime of understanding and commitment to this work, but what is most remarkable about the performance is its *freshness*. Arrau's enlivening balance of vigor and elegance enables us to rediscover the familiar music along with him. The partnership with Davis is outstandingly successful, and the sound is superb. It all adds up to a surprisingly clear choice.

□ **BEETHOVEN: *Violin Concerto in D Major*.** Quite in a class by itself, both as performance and as value, is the stunning recording by Jascha Heifetz with the Boston Symphony under Charles Munch, which comes with no mere "filler" but nothing less than the complete Brahms concerto (RCA RCD1-5402). Another outstanding recording is the one by Anne-Sophie Mutter with Herbert von Karajan and the Berlin Philharmonic (DG 413 818-2). The mono recording by Yehudi Menuhin with Wilhelm Furtwängler and the Philharmonia Orchestra is of more than historical



Antal Doráti: authoritative Bartók

Michael Tilson Thomas: fine accounts of Debussy's *La Mer* and of Gershwin's *Rhapsody in Blue*.



interest, and it comes with an elegant account of the Mendelssohn Concerto in E Minor (Angel CDC-47119).

□ **BEETHOVEN: *Symphonies Nos. 1-9***. Otmar Suitner may be little known in our country (though he has conducted some of our major orchestras), but his six-disc set with the (East) Berlin State Orchestra is remarkably satisfying throughout the cycle. My only complaint is the inadequate stuff that passes for English annotation in the Denon set (C37-7251-6). Suitner is generous with repeats, too, and the sound quality, I believe, surpasses what DG has derived from the Telemondial video soundtracks for the new set by Herbert von Karajan and the Berlin Philharmonic. Karajan's probably final Beethoven cycle is in the nature of a testament, however, reaching impressive heights in some of the individual works, and his six-disc set includes four overtures—*Egmont*, *Coriolan*, *Fidelio*, and *Leonore No. 3* (DG 415 066-2). Kurt Masur's set on Philips (416 274-2) also includes those overtures and is a fine buy, but it is sonically and musically outclassed by the Suitner and Karajan recordings.

□ **BERLIOZ: *Symphonic Fantastique***. Of the ten versions on CD so far, none is less than satisfying. I still find more of the essential Berlioz in Carlos Paita's reading with the London Symphony (Lodia LOCD-777), but the combination of a brilliant performance and absolutely gorgeous sound may give Charles Dutoit and his Montreal Symphony the edge (London 414 203-2). Other choice versions are the sizzling one by the Philadelphia Orchestra under Riccardo Muti (Angel CDC-47278) and the successfully transferred one by Colin Davis and the Concertgebouw (Philips 411 425-2).

□ **BRAHMS: *Piano Concerto No. 2, in B-flat Major***. Emil Gilels, Fritz Reiner, and the Chicago Symphony still seem the best-balanced team in this work

(RCA RCD1-5406). Among newer recordings, the strongest contender may be the one by Krystian Zimerman, Leonard Bernstein, and the Vienna Philharmonic (DG 415 359-2). It is more intense than the straightforward Gilels/Reiner but just as remarkable for its total integration between soloist and conductor.

□ **BRAHMS: *Violin Concerto in D Major***. The phenomenal Heifetz/Reiner recording sounds as good as new, and, with the Beethoven concerto on the same disc, it is surely the best buy (RCA RCD1-5402).

□ **BRAHMS: *Symphony No. 4, in E Minor***. Carlos Kleiber's Fourth, with the Vienna Philharmonic, is electrifying, but the sound is curiously muffled for a 1981 digital recording (DG 400 037-2). The old Bruno Walter, with the *Tragic Overture* as filler, may be a better buy (CBS MK 42023).

□ **BRITTEN: *The Young Person's Guide to the Orchestra***. There is so far only one recording on CD of this brilliant "concerto for orchestra" in the form of variations on a Purcell theme, but it is a splendid one—the remake by Eugene Ormandy and the Philadelphia Orchestra (RCA RCD1-2743). There is no narration, despite information to the contrary in some catalogs.

□ **BRUCKNER: *Symphony No. 4, in E-flat Major ("Romantic")***. There's not a disappointing version among the half-dozen or so available, but the deepest Brucknerian satisfactions are to be had from Karl Böhm and the Vienna Philharmonic (London 411 581-2) or Herbert Blomstedt and the Dresden State Orchestra (Denon C37-7126), both sumptuously recorded. Eliahu Inbal and the Frankfurt Radio Orchestra offer a rare opportunity to hear the first (1874) version of the work, which has a totally different scherzo and enough other differences to make it intriguing

for serious Brucknerians (Teldec CDT-42921).

□ **CHOPIN: *Piano Concertos No. 1, in E Minor, and No. 2, in F Minor***. Emanuel Ax's splendid performances of both works, with Ormandy and the Philadelphia Orchestra, are on a single generously filled RCA disc (RCD1-5317). This version of the First Concerto is perhaps the finest concerto recording Ax has made so far, as well as the most persuasive current account of this work. András Schiff, with Doráti and the Concertgebouw, brings a quite exceptional feeling of substance and intimacy to the Second, paired in this case not with Chopin but with the Schumann concerto (London 411 942-2).

□ **COPLAND: *Appalachian Spring***. Bernstein's remake with the Los Angeles Philharmonic is all one could ask, and it comes with similarly superb performances of Barber's *Adagio for Strings*, William Schuman's *American Festival Overture*, and Bernstein's own *Candide Overture* (DG 413 324-2).

□ **DEBUSSY: *La Mer***. Again, there is no disappointing version in circulation. If I were to pick Reiner (RCA RCD1-7018) or Leonard Slatkin (Telarc CD-80071) over Michael Tilson Thomas and the Philharmonia (CBS MK 37832), it would be only to avoid duplicating the *Nocturnes*, the other work on Thomas's disc.

□ **DEBUSSY: *Nocturnes***. Bernard Haitink's disc is not too generously filled, but his performance is outstanding and comes with a similarly persuasive one of the remarkable *Jeux* (Philips 400 023-2). Thomas's fine account is enhanced by shimmeringly realistic sound, but there is still magic in the versions by Ernest Ansermet (London 414 040-2) and Leopold Stokowski (Angel CDC-47423), despite less than fully competitive sonics.

□ **DVOŘÁK: *Cello Concerto in B Minor***. Mstislav Rostropovich's coupling of this work and Tchaikovsky's *Rococo Variations*, recorded with Karajan in 1968 (DG 413 819-2), may be superseded by his remake of the same coupling with Seiji Ozawa and the Boston Symphony, due soon from Erato. Heinrich Schiff's version, with Colin Davis conducting and the Elgar concerto as the second work (Philips 412 880-2), is a contender, and so is the especially poetic realization by Frans Helmerson, with Neeme Järvi conducting, on a less generously filled but brilliantly recorded Bis CD (CD-245).

□ **DVOŘÁK: *Symphony No. 9, in E Minor ("From the New World")***. Among the several really fine versions, I would place Lorin Maazel's with the Vienna Philharmonic at the top of the list (DG 410 032-2), followed by the fleet and fresh James Levine/Chicago Symphony version (RCA RCD1-4552)

and the solid one by Vaclav Neumann and the Czech Philharmonic (Supraphon 33C37-7002). Of these, only the Maazel recording comes with an extra composition (the *Carnival Overture*) to fill out the disc.

□ **FALLA:** *Nights in the Gardens of Spain*. Alicia de Larrocha, with Rafael Frühbeck de Burgos and the London Philharmonic, is poetic and authoritative (London 410 289-2), but Eva Maria Zuk, with her husband Enrique Bátiz conducting, is no less magical, and the latter performance comes with an outstanding account of Falla's *The Three-Cornered Hat* (Varèse/Sarabande VCD-47210).

□ **FRANCK:** *Symphony in D Minor*. There's only one digital recording of this favorite work on CD so far, Bernstein's with the Orchestre National de France (DG 400 070-2), and it's preferable to Furtwängler's "historical" mono recording. Bernstein's disc has an exquisite filler, Saint-Saëns's *Le Rouet d'Omphale*.

□ **GERSHWIN:** *Rhapsody in Blue*. For the most satisfying performance and sound, regardless of collateral material, the choice comes down to the recording by the late Eugene List with Erich Kunzel, whose disc includes *An American in Paris* (Telarc CD-80058), or the one with Michael Tilson Thomas conducting the Los Angeles Philharmonic from the keyboard in the original jazz-band orchestration along with the Second Rhapsody and a bunch of Gershwin novelties (CBS MK 39699).

□ **GRIEG:** *Piano Concerto in A Minor*. Radu Lupu, with André Previn, gives an exceptionally fresh and appealing performance, coupled with the Schumann concerto (London 414 432-2). If you don't want that coupling, the older Arthur Rubinstein recording, with Alfred Wallenstein conducting, has a good deal to recommend it—and comes with Rubinstein's final recording of the Tchaikovsky Concerto No. 1, with Erich Leinsdorf and the Boston Symphony (RCD RCD1-5363)

□ **HANDEL:** *Messiah*. Curiously, it seems to be easier to narrow down the choices in cases where there are a dozen recordings instead of only two or three. For *Messiah*, I find more pleasure in the "authentic" version conducted by John Eliot Gardiner (Philips 411 041-2) than in any other—although the one under Hogwood, with boys instead of women in the chorus (L'Oiseau-Lyre 411 858-2), is nearly as pleasing. Among the larger-scaled performances, I would pass over the recent ones under Solti and Davis in favor of the live one conducted by Doráti in Washington, D.C., in 1984, a "reconstruction" of the big Handel festival performance two hundred years earlier on the twenty-fifth anniversary of the composer's death (Pro Arte CDD-232).

□ **HANDEL:** *Water Music*. Pinnock and the English Concert combine the best of modern scholarship and inspiring performance, surpassing all rivals in either the "original-instruments" or big-modern-orchestra category (DG Archiv 410 525-2). Hogwood's version is also appealing (L'Oiseau-Lyre 400 059-2), but he has recorded only one of the three suites that make up this work—the big one in F Major, which includes the best-known numbers—and his disc doesn't even carry a listing of the individual movements, let alone index or track access to them.

□ **HAYDN:** *Trumpet Concerto in E-flat Major*. From another virtually "can't miss" line-up of recordings, my choices would come down to Maurice André's latest, with Muti conducting (Angel CDC-47311), and the one by Wynton Marsalis with Raymond Leppard conducting (CBS MK 37846). Gerard Schwarz, playing and conducting, is at least as appealing, but his Delos CD is not very well filled out (DCD 3001).

□ **HAYDN:** *Symphony No. 94, in G Major ("Surprise")*. Hogwood turns in one of his very finest performances, superbly recorded and paired with the Symphony No. 96 (L'Oiseau-Lyre 414 330-2). Davis and the Concertgebouw are nearly as persuasive in Nos. 94 and 96, and their disc has the advantage of including a third work, an absolutely marvelous performance of No. 93 (Philips 412 871-2).

□ **HOLST:** *The Planets*. Karajan's Berlin remake is superb (DG 400 028-2), but don't overlook the richly recorded performance by the Scottish National Orchestra under Alexander Gibson, probably the finest thing that this conductor has done on records (Chandos CD 8302).

Riccardo Muti: brilliant Berlioz



□ **LISZT:** *Piano Concertos No. 1, in E-flat Major, and No. 2, in A Major*. The sturdy old recording by Sviatoslav Richter, with Kiril Kondrashin conducting the London Symphony, has been reissued on CD, and the sound is splendid (Philips 412 006-2).

□ **MAHLER:** *Das Lied von der Erde*. The transfer to CD accomplished a miraculous transformation in terms of sound quality for the incomparable 1952 mono recording by Kathleen Ferrier, Julius Patzak, and the Vienna Philharmonic under Bruno Walter (London 414 194-2). Nothing else comes very close, but if you must have stereo try Otto Klemperer's recording with Christa Ludwig and Fritz Wunderlich (Angel CDC-47231).

□ **MAHLER:** *Symphony No. 4, in G Major*. The most beautiful performance of this most lovable of Mahler's symphonies is the live one from the 1950 Salzburg Festival, with Bruno Walter conducting the Vienna Philharmonic and Irmgard Seefried as soloist (a somewhat more expansive reading than Walter's famous recording with the New York Philharmonic). Its belated release is on CD only, and the mono sound is surprisingly rich, warm, and vivid (Varèse/Sarabande VCD-47228). For those who require true-digital stereo sonics, the recordings by Maazel, with Kathleen Battle and today's Vienna Philharmonic (CBS MK 39072), Klaus Tennstedt with Lucia Popp (Angel CDC-47024), and Haitink with Roberfa Alexander (Philips 412 119-2) are all richly satisfying in every respect.

□ **MENDELSSOHN:** *Violin Concerto in E Minor*. No "far and away the best" among the eight CD's of this work: they are all first-rate. I find Cho-Liang Lin, with Thomas conducting, especially fresh sounding in both this concerto and the companion Saint-Saëns Third (CBS MK 39007), and Kyung-Wha Chung and Dutoit are almost equally so, with an elegant Tchaikovsky concerto on their disc (London 410 011-2).

□ **MENDELSSOHN:** *Symphonies No. 3, in A Minor ("Scottish"), and No. 4, in A Major ("Italian")*. Claudio Abbado's performances, in his set of all of Mendelssohn's mature symphonies and then some, are now by far the most appealing ones of both of these popular works. It's a four-disc set, but with such wonderful music making, who's counting? For the sense of freshness and discovery in the familiar works as well as the big choral work Mendelssohn designated his Second Symphony, this is one of the most thoroughly recommendable "integral" recordings ever made—irresistible, indispensable, and a joy (DG 415 353-2). □

This article is excerpted from a more extensive discography that will be made available in pamphlet form later this year.

YAMAHA DSP-1

DIGITAL SOUND FIELD PROCESSOR

NUMEROUS audio signal-processing techniques have been developed with the aim of improving the realism of stereo sound reproduction. Most have attempted to expand the subjective space surrounding the listener, using time delay or phase manipulation to mask some of the spatial and imaging flaws of a typical home listening environment. Time-delay systems, however, whether analog or digital, were expensive, and if not used carefully they could create worse problems than those they were meant to cure.

Another approach involved increasing the two stereo channels to four, usually by matrixing techniques that depended on electro-acoustic legerdemain to maintain an illusion of separation between channels. At their best, these quadraphonic systems were able to pro-

*The DSP-1 will enlarge
your listening room
and let you shift to
dozens of different
sonic environments.*

by Julian Hirsch

duce a substantial improvement in the spatial qualities and "naturalness" of sound, but the user was at the mercy of the record manufacturers, and before long most quad discs were designed primarily to create a gimmicky and unnatural surround-

sound effect. The whole concept then suffered a rather swift demise in the marketplace and today is mourned by few.

Currently there are several spatial-enhancement systems on the market that use either electronic or acoustic means to control the time and amplitude relationships between the outputs of two stereo speakers. Although some of these systems can be very effective, they often impose undesirable restraints on the positions of the speakers and the listeners, and even at their best very few succeed in removing the room from the listening equation.

The goals of the designers of the Yamaha DSP-1 Digital Sound Field Processor (\$849) were more ambitious than those of their predecessors. Yamaha's aim was actually to transfer the acoustic properties (the "sound field") of real concert halls and other live-music venues into

PHOTOS BY ROBERT LORENZ



the home listening room. There have been claims of similar achievements in the past, but they proved not to be justified. Yamaha's approach, however, seems to be based on a more solid foundation. Recent advances in digital technology and the manufacture of very-large-scale integrated circuits (VLSI's) have for the first time made a product like the DSP-1 conceivable for the consumer market.

Direct and Reflected Sound

The sound field surrounding a listener in any environment consists of the direct sounds arriving from all sources, a large number of "early reflections" arriving 10 to 100 milliseconds after the direct sounds, and, finally, a reverberation component. Yamaha's studies led the company's engineers to the conclusions that the early reflections give a sense of directionality, timbre, and clarity to the sound and that the subsequent reverberation contains no directional information, is essentially constant throughout the listening area, and tends to lessen clarity and definition. The system used in the Yamaha DSP-1 does not affect the direct arrivals, which are universally understood to provide specific localization clues to the listener.

As a first step, Yamaha engineers analyzed the actual sound field at

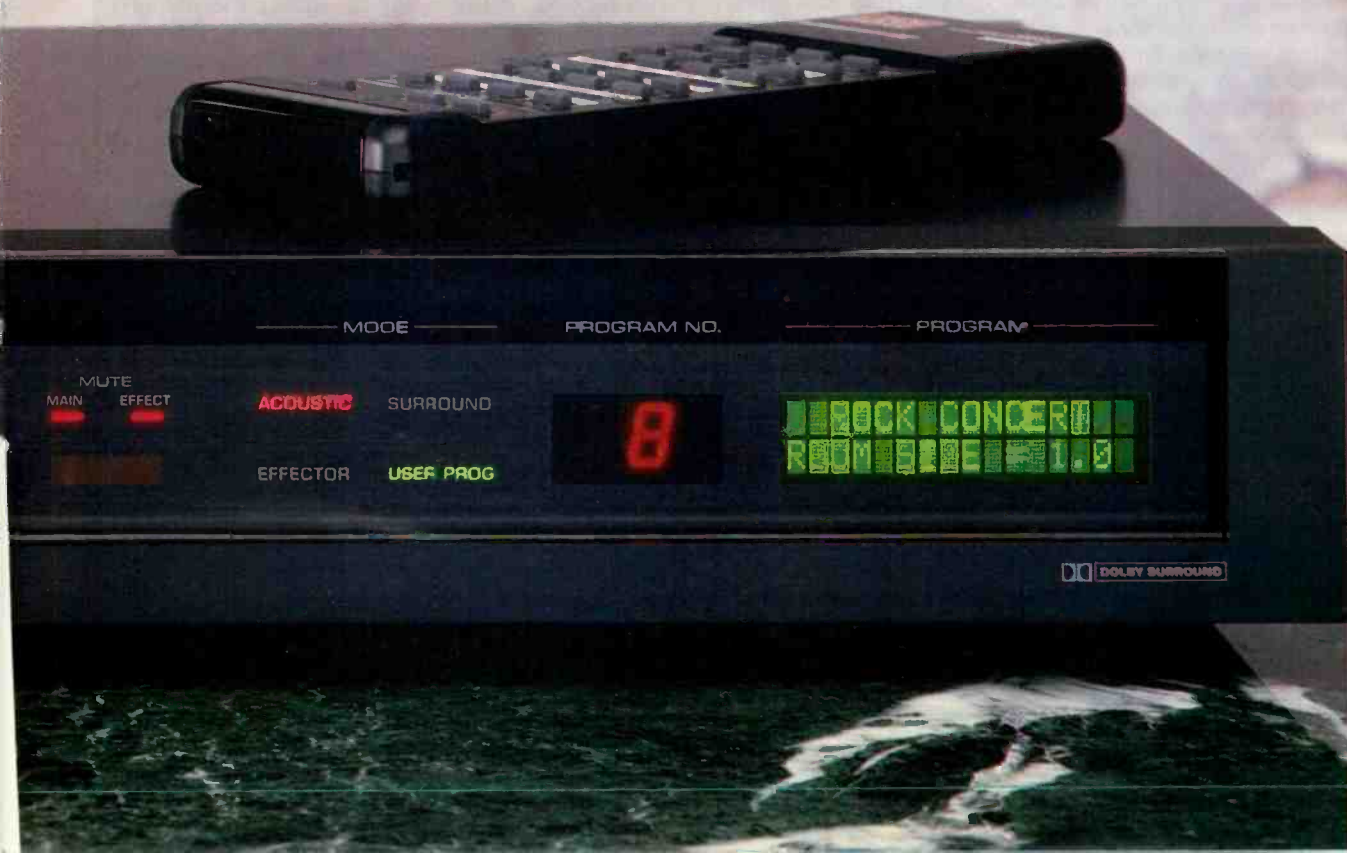
specific listening locations in a number of halls throughout the world. The analysis was done by using a cluster of four closely spaced microphones, which enabled the engineers to pinpoint the location of an apparent sound source accurately by digitally processing the amplitude and time-arrival information in the microphone outputs. This technique had been employed in earlier Yamaha projects, including the development of a unique sound-image control system for the Steel Pavilion at Japan's 1985 Tsukuba Science Exposition. The digitally processed signals in that system contained the information needed to specify the actual sound field at a specific point in the hall.

In the DSP-1, an inverse operation takes place. The device synthesizes a transfer function that is applied to an incoming signal to make it seem to the listener as though he were located at the microphone position in the original hall, hearing the sound originating from its stage. Of course, this theoretical result of the DSP-1's operation is subject to modification by the playback speakers, their placement, and the specific recording being played (hall ambience in the program will inevitably alter the reproduced sound field).

The heart of the DSP-1 is a VLSI

developed by Yamaha, which is the world's largest musical-instrument manufacturer, for use in electronic musical instruments. This VLSI, the Yamaha YM-3804, is a very powerful general-purpose audio processor that makes it possible to perform a wide variety of signal-processing operations in real time. It uses the same sampling rate and quantization as CD players (44.1 kHz and 16-bit linear sampling), giving it the same dynamic range (94 dB) and distortion level (0.005 percent) as a CD in all of its signal-processing operations. In addition, the computational capabilities and speed of the YM-3804 are further enhanced by its internal 24-bit arithmetical processing.

The information assembled by Yamaha from hall measurements—including echo patterns, timing, apparent source directionality, volume level, and frequency response—was stored in the read-only memory (ROM) of the DSP-1. Using this information, the YM-3804 calculates the early reflections in real time as music is played through it. In fact, the three YM-3804 processors used in the DSP-1 can synthesize up to eighty-eight early reflections (that is, twenty-two apiece for four additional "effect" speakers), and each of these reflections has its own timing and level.



The memories of the DSP-1 contain the key information on sixteen different acoustic environments, ranging from a disco to a cathedral. Any one of these can be called up at the touch of a button on its wireless remote control. In addition, the specific parameters of any of the stored "halls" can be modified at will, and the result can be stored in a second bank of sixteen USER PROGRAM memories. These alterable parameters include reverberation time,

The 3.5-second reverberation time of the MUNSTER (cathedral) setting imparted an awesome sense of reality to organ and choral works that were meant to be heard in such an environment.

room size, liveness, front- and rear-channel time delays, highpass and lowpass filter cutoffs (to limit the bandwidth of the processed signal), signal-component levels, and the relative proportions of front- and rear-channel information in the processed (effect) output.

Finally, the DSP-1 can be switched to perform a wide variety of sound-effect operations on the output of an electronic musical instrument plugged into its front-panel jacks. It also has two Yamaha surround-sound modes as well as Dolby Surround decoding for use with home video systems. In all, it can provide up to forty-eight instantly accessible listening environments or special-effect modes.

Speakers All Around

The Yamaha DSP-1 requires either two or four effect speakers in addition to the regular front stereo speakers. For best results, it is recommended that four be used, one in each corner of the room. The stereo program from the preamplifier output is passed through to the main power amplifier unchanged. Two low-powered stereo amplifiers can be used to drive four effect speakers, or Yamaha's new M-35 power amplifier (\$249) can be used to supply two 40-watt channels or four 20-watt channels. Alternatively, if rear speakers only are added, the DSP-1 can be set to mix the processed front-channel programs with the main stereo channels.

The Yamaha DSP-1, finished in

black, measures 17½ inches wide, 12½ inches deep, and 2¾ inches high, and it weighs 10 pounds. Its operating status is shown in a large front-panel window, which contains a red alphanumeric display that identifies the selected program by name and gives its individual parameters as they are keyed in from the remote control. Other readouts in the window show the operating mode—ACOUSTIC, SURROUND, EFFECTOR, or USER PROGRAM—the program number, and whether the main or effect channel has been muted (like program and parameter selection, muting can also be done from the remote control).

There are input and output jacks in the rear for connection to a tape deck, and a front-panel switch selects the line-input or effect (processed) signal for recording or supplies the playback from a tape deck to the processor inputs. Three concealed phono jacks on the front panel are used for injecting mono or stereo signals from an external musical instrument.

The rear apron also contains an INPUT BALANCE control (for use with Dolby Surround) and the various signal input and output jacks, including a mono output for driving a center-fill channel with either a full bandwidth signal or only the bass frequencies (below 200 Hz). In addition, there are switches that mix the effect signal with the main (front) outputs and reduce the main signal by 10 dB when the DSP-1 is used with low-efficiency surround speakers, and there is a single unswitched a.c. outlet. All jacks on the DSP-1 are gold-plated.

Lab Tests

Conventional laboratory measurements are difficult to make on most signal processors and usually tell little about their subjective qualities. Not only is the Yamaha DSP-1 no exception to this rule, but its unusual complexity makes the problem even more difficult. Nonetheless, we did make some measurements of its basic performance.

The main channel had a gain of 0 dB (as rated) with a high-impedance load and -1 dB with a standard EIA load of 10,000 ohms in parallel with 1,000 picofarads of capacitance. The output clipped at 2.8 volts. The clipping level at the front and rear effect outputs was in the range of 0.8 to 1.1 volts, depending on the operating parameters. The A-weighted noise output of the main channels was -106 dB (referred to

1 volt), and in the effect channels it was between -82 and -85 dB, again depending on the operating parameters. At 1 volt output and 1,000 Hz, the total harmonic distortion plus noise was 0.0019 percent in the main channels, 0.017 percent in the front effect channels, and 0.026 percent in the rear effect channels. In addition to varying with the different control settings, the effect channels' distortion measurements consisted mostly of low-level wide-band noise; the actual harmonic distortion was well below 0.01 percent. The leakage from the 44.1-kHz sampling frequency into the DSP-1's effect outputs was only 5 microvolts (-106 dB referred to 1 volt), although we also found a 13,000-Hz component at -93 dB.

We measured the frequency response of the effect-channel outputs with a number of the available filter cutoffs. The -3-dB frequencies were very close to the specified values, and the cutoff slopes were 6 dB per octave. The frequency response in the THRU (flat) setting of the filters was well within the rated +0.5, -3 dB from 20 to 20,000 Hz. The high-frequency response rolled off to -2 dB at 20,000 Hz, apparently because of the lowpass filter (similar to that in a CD player) used to remove ultrasonic components from the output of the digital-to-analog (D/A) converter.

The only other measurement we made was of the effect of the PITCH CHANGE mode. According to the indications on the front-panel display, this feature can change the pitch (in real time) of an incoming signal over a ±12-percent range without altering the time relationships (tempo) of the program. Subjectively, it

With our test CD's, we never found a program whose sound was not improved by the proper use of the DSP-1. The improvement ranged from substantial to mind-boggling.

appeared to do just that. With a sine-wave input, the frequency changes could easily be measured. The actual frequency shift was typically about 60 to 70 percent of the indicated shift, reaching maximum shifts of +78 and -44 percent at the ±100-percent indications. There is also a FINE SHIFT mode, which shifted the frequency by ±6

percent over the indicated ± 100 -unit scale.

Listening Tests

Our other tests were entirely subjective. First, for each of the thirty-two available programs in the unit's memories (we did not try the USER PROGRAM feature), we measured the indicated adjustment range of each parameter, as well as its initial (default) value. Some of these parameters (time delays and filter bands, for example) are in standard units, while others (room size, liveness) are expressed in arbitrary or relative terms.

We then listened to a couple of dozen CD's, both classical and popular, using every available and applicable program setting. Our listening setup, though hardly ideal, did make use of the full suggested complement of six speakers. Separate stereo integrated amplifiers drove the two sets of effect speakers, while our regular amplifier and preamplifier, with the DSP-1 connected between them, drove the main speakers. The usual listening position is just forward of the rear effect speakers, but we moved about considerably during the listening tests.

As might be expected, the effectiveness of the Yamaha DSP-1 depended greatly on the musical program as well as on its internal program selection and related adjustments. A final instruction manual was not available at the time of our test. Fortunately Yamaha supplied a fifteen-page operation guide that was a model of clarity and made possible a reasonably complete evaluation of this unique product.

The guide emphasized that the unit should be operated with the processed output audible at a level at least as high as, or even higher than, the level of the main speakers. This recommendation is directly opposite to the procedure for conventional time-delay enhancement systems, which must be set to almost subliminal levels to avoid artificial effects. When listening in the vicinity of the rear speakers, we sometimes heard an unnatural quality as individual instruments or voices appeared from the rear as well as the front, so we preferred to reduce the rear level, though we usually did this by shifting the effect signal balance toward the front instead of turning it down altogether. The best results were usually obtained by listening closer to the main speakers than we usually do.



YAMAHA DSP-1 PROGRAM MODES ACOUSTIC

- | | |
|--------------------|--|
| 1. HALL 1 | Large hall |
| 2. HALL 2 | Medium-sized hall (1,000-person capacity) |
| 3. HALL 3 | General-purpose hall for concerts, plays, etc. |
| 4. CHAMBER | Large room with high ceiling for chamber music |
| 5. MUNSTER | Large church or cathedral |
| 6. CHURCH | Small church (300-person capacity) |
| 7. JAZZ CLUB | Low-ceiling, small-room jazz club |
| 8. ROCK CONCERT | Bright-sounding club with not much reverberation |
| 9. DISCO | Much reflection, high-density crowd |
| 10. PAVILION | Large pavilion like Japan's Budokan |
| 11. WAREHOUSE LOFT | Large concrete warehouse or storeroom |
| 12. STADIUM | Outdoor stadium, reflections mostly in front |
| 13. PRESENCE | A single (different) delay in each speaker |

SURROUND

- | | |
|--------------------|--|
| 14. SUR 1 | Large theater with wide stage (Yamaha surround) |
| 15. SUR 2 | Medium-sized theater with depth (Yamaha surround) |
| 16. DOLBY SURROUND | Digital-delay Dolby Surround (six channels plus subwoofer) |

SOUND EFFECTOR

- | | |
|---------------------|---|
| 1. DELAY L, R | Straight four-channel digital delay |
| 2. ST ECHO | Stereo feedback echo |
| 3. ST FLANGE A | Sweeping comb-filter stereo modulation |
| 4. ST FLANGE B | Deeper flanging effect |
| 5. CHORUS A | Shimmering stereo chorus |
| 6. CHORUS B | Deeper chorus effect |
| 7. ST PHASING | Stereo phasing |
| 8. TREMOLO | Pitch modulation |
| 9. SYMPHONIC | Lyrical and shining sound |
| 10. ECHO ROOM | Highly reflective live room |
| 11. PITCH CHANGE A | Real-time pitch shift of input signal |
| 12. PITCH CHANGE B | Two notes added above input signal |
| 13. AUTO PAN L TURN | Automatic circular panning to the left |
| 14. AUTO PAN R TURN | Automatic circular panning to the right |
| 15. AUTO PAN F-R | Automatic panning front to rear |
| 16. AUTO PAN L-R | Automatic panning left to right |

In that position, the subjective level of the effect sound can exceed that of the main speakers by a considerable amount without being distinguishable as a separate source.

It was obviously important to preserve a sense of scale in the reproduction of the music. The 3.5-second reverberation time of the *MUNSTER* (cathedral) setting imparted an awesome sense of reality to organ or choral works meant to be heard in such an environment, but it hopelessly muddled the sounds of single instruments, singers, or chamber groups. By the same token, while close-miked singers or jazz performers were completely at home in the *JAZZ CLUB* or *DISCO* environments, these imparted no significant enhancement to the sound of a large choral group. Any new owner of a DSP-1 should (and no doubt will) experiment with its capabilities, but for the ultimate appreciation of its benefits, it should be used intelligently.

Comments

Even our short (too short!) exposure to the Yamaha DSP-1 was sufficient to produce a strong addiction to its capabilities. After only a few moments of listening, muting the effect signals from the controller caused a devastating collapse of the sound field into the two main speakers, which suddenly seemed dull and lifeless—as they assuredly were not! We have experienced a similar reaction when switching off a properly adjusted time-delay system, but beyond that the similarity ends. Although it has time-delay functions, the DSP-1 is *much* more than a mere time-delay device.

One of the most unexpected qualities of the DSP-1 is the enormous subjective level increase it frequently produces when it is turned on, especially in the bass. You sense that the effect sound is perhaps 5 to 10 dB stronger than the main sound, yet the measured output of the front and rear effect amplifiers rarely reached that of the main amplifier, let alone exceeded it. Also, the combined bass contribution of all four of the small effect speakers we used could hardly have compared to that of only one of the main speakers. Clearly, the level increase was an auditory illusion, but a most convincing one.

We never found a program whose sound was not improved by proper use of the DSP-1. The improvement ranged from substantial to mind-boggling. Prior to our tests, we had



The DSP-1's remote control provides instant access to thirty-two different program modes.

attended a press demonstration of the DSP-1 given in a much larger room, with appropriate speakers carefully placed. The sound was very impressive, but we expected no less from a proper demonstration by people familiar with the instrument. It was gratifying to find that using it made a worthwhile improvement even under the much less ideal circumstances of our own test.

Although the information supplied with the DSP-1 explained its fundamental operation well enough, we hope some things will be explained in more detail in the final instruction manual. For example, the stored programs for some environments contain a parameter called *REVERBERATION TIME*, a standard acoustic term expressed as usual in seconds, and one called *HIGH*, which is expressed in arbitrary units from 1 to 10. Our bench tests showed that the *HIGH* setting varies the overall echo density in the program, but it should be explained further. Similarly, other programs have the parameters *ROOM SIZE* (from 0.1 to 8) and *LIVENESS* (0 to 10). The *ROOM SIZE* setting apparently adjusts the total number of echoes and the time spacing between them, and *LIVENESS* controls the amplitude of the reflections as a group.

It is likely that cynics will dismiss this product as simply an improved time-delay device with frequency-response control, numerous simultaneous time delays, and a digital memory system that stores a num-

ber of preset conditions. The DSP-1 has all of those things, of course, but to describe it in those terms would be like describing a Boeing 747 as an overgrown version of the Wright brothers' biplane with a bit more power, comfortable seating, and a lot of fancy gadgets. On the other hand, it would be misleading to say that the DSP-1 can magically transport the listener to one of the real environments on which it is based. I am afraid that doing so would take something more than three YM-3804 VLSI chips and a rather large memory (according to a Yamaha spokesman, the DSP-1 contains over 1 megabyte of digital storage).

This product is not a panacea for audio's ills and limitations. But the Yamaha DSP-1 does actually fulfill most of the claims we have seen made, usually with unwarranted optimism, for a host of previous signal processors. They were *supposed* to make the walls of your room move back, and perhaps disappear. Some of them almost did that, but they usually added enough artificiality to the sound to discourage their continued use. At most, they could alter your listening room's sound in the direction of a larger, more reverberant environment.

The DSP-1 takes a giant additional step in the same direction. It probably will not fool you into thinking that you are in Carnegie Hall or the Metropolitan Opera House, but with your eyes closed you will surely have trouble believing that you are still in your familiar listening room! Best of all, you can shift to dozens of different environments, at the touch of a button, from your favorite listening position. And you can tailor any of these environments to your exact taste for the music you are listening to. The possibilities are endless.

I have not discussed the *SOUND EFFECTOR* programs of the DSP-1, which will be of special interest to people who play or compose with electronic instruments (I am not one of them). Such features as the ability to change pitch in real time (you can make it different for the left and right sides, if you wish!) and to rotate the sound in various directions at controllable rates will doubtless appeal to many. There simply is not space here to describe the Yamaha DSP-1 fully. I have spent a number of days getting acquainted with it, and it is unique in my experience. Hear it if you possibly can. □

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Pictured above, left to right are: The T95, T55, T65, and, the TL900, TL500, TL600.

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25 Years

Julian Hirsch

A silver anniversary salute to the director of Hirsch-Houck Laboratories

■ by Michael Smolen ■



PHOTOS BY ELENI MYLONAS

This fall marks the twenty-fifth anniversary of Julian Hirsch's association with STEREO REVIEW.

His first test reports for the magazine were published in the October 1961 issue.

SINCE 1954, Julian Hirsch has been a pivotal figure in the audio world, and for the past quarter-century he has both delighted and infuriated hi-fi enthusiasts with his honest, accurate equipment test reports in STEREO REVIEW. He has answered countless readers' questions, and his "Technical Talk" columns have

I don't get all worked up over every little innovation. Today's way-out audiophiles are eager to perceive everything new as wonderful and marvelous, but no one's going to thrill me by rearranging the buttons and lights on a panel.

cleared the air around some perplexing audio subjects. Moreover, audio manufacturers have come to respect his opinions implicitly.

This October will mark the twenty-fifth year of Hirsch's close association with STEREO REVIEW, and consequently we felt this was a proper time to give you a look at the man behind our component testing program. And if you were expecting a picture of a doddering scientist in a worn lab coat entrenched in a room full of scopes, wires, flashing lights, and gutted pieces of hi-fi equipment, you're in for a big surprise.

Born in New York City, Julian Hirsch grew up in a nearby suburb. He completed his education with a bachelor's degree in electrical engi-



neering from Cooper Union. He was then an amateur radio enthusiast, and the license plate on his car still sports his call sign.

While working for General Precision Laboratories in Pleasantville, New York, in 1949, he got his start in audio. Working in the same department as Hirsch were several of the early rabid audiophiles who attended the annual audio fairs in New York, built amplifiers, and read the official journal of the Audio Engineering Society, *Audio Engineering*, the precursor of today's *Audio* magazine. An article in *Audio Engineering* by two men named Sarcer and Sprinkle, about how to build an Americanized version of the original Williamson amplifier, caught Hirsch's eye. His decision to try to build that amplifier sparked his audio career.

"I found out that the original Williamson amplifier—the purest of

the pure—could still be built," recalls Hirsch. "The Partridge transformer, which was not available in this country, could be bought from England. It cost about \$20, a lot of money in those days, and I bought one. It was a huge, heavy transformer with a special winding configuration that D. T. N. Williamson developed for his amplifier. It had very low leakage inductance, a very wide bandwidth, and a very flat frequency response from about 2 Hz to at least 200 kHz, and that's through the transformer!

"So I built the amplifier using a pair of 807 tubes, transmitting tubes with which I was very familiar, and a power supply that I constructed out of World War II surplus parts. It put out something on the order of 12 watts at the clipping point, and when you got down below 10 watts or so the distortion was well under 0.1 percent, about ten times less than commercial amps in those days. It was a great amp. It could give you flat feet if you carried it around too much!

"I think my first speaker system used a GE 1201D, a 12-inch GE driver that was to the speaker world what the GE variable-reluctance cartridge was to the pickup world. I built it into a cabinet that was designed by C. G. McProud, the publisher of *Audio Engineering*. By then I had the incurable hi-fi bug, and I still do."

About five years later, early in 1954, Hirsch and his audiophile friends came across *Consumer Reports'* first hi-fi amplifier report. Startled that with all the test facilities Consumers' Union had the report rated a Bogen DB-20—a pretified PA amp—as a "Best Buy" and placed the 30-watt McIntosh MC30 far down the list, Hirsch and his friends decided to take the bull by the horns and form what turned out to be the first underground audio publication, the *Audio League Report*.

Their employer at General Precision Laboratories let them use the company's extensive test and listening facilities on their own time, and the League formed the first consumer audio publication for the "way-out" audiophiles of the time. One of Hirsch's buddies put up \$250 to buy a one-sixth-page ad in *High Fidelity*. (Hirsch was interested, but not enough to stick his neck out and invest his own money.) The ad offered subscriptions to the *Audio League Report* for \$3 a year. "There was no issue and no equipment to

test," says Hirsch with a laugh, "but at least the road was paved with good intentions."

A "very surprising" number of subscriptions and checks came in, and in the fall of 1954 the League published its first issue, full of tests on equipment Hirsch and his partners had either bought themselves or had borrowed from their friends. And it was during these tests that Hirsch and his associates first realized how often equipment failed to meet manufacturers' advertised claims.

Their second issue contained a write-up of the annual Audio Fair, then held in the New Yorker Hotel in New York City, where Audio League members handed out leaflets and were able to convince some manufacturers to let them put copies of their publication in the exhibit booths.

"That was the year the AR-1 was first exhibited," says Hirsch. "I'll never forget AR's room. It was large, and it had one speaker sitting there—this was before stereo—with a number of seats some distance away. Ed Villchur and Henry Kloss were spelling each other on booth duty—they were the whole Acoustic Research company then—and I went in and sat down and listened, and I just couldn't bring myself to leave that room. I left a few times to go hear other speakers, but I invariably ended up back in the AR room. You just can't appreciate today the revolution in sound that the AR-1 represented."

The *Audio League Report* wrote up the AR-1, Hirsch and co-worker Gladden Houck doing the testing and Hirsch writing the report. That set the framework for the magazine, and with the other members of the league handling the advertising and business affairs the magazine soon took off. But such an amicable working arrangement did not last, and soon Hirsch was not only doing 99 percent of the testing and writing, he was processing subscriptions as well.

The League published sixteen issues over a period of three years before the letters from irate readers, the Post Office, and the Better Business Bureau began to get "rather ominous." By that time the *Audio League Report* had 5,000 subscribers, all from word of mouth, and Hirsch and his wife often spent entire evenings sorting out subscription problems. They realized they just couldn't handle it. But the original members of the League were by

then all working in different places, so they decided to try to find someone else to fulfill the subscription requirements.

In 1958 the business aspects of the *Audio League Report* were turned over to a nearly defunct magazine published by Milton Sleeper. That magazine soon went out of business, the Audio League disbanded, and Hirsch and Gladden Houck went on to form Hirsch-Houck Laboratories. The first publication to which Hirsch-Houck sold its services was *Audio Craft*, edited by Roy Allison (now a well-known speaker manufacturer). But *Audio Craft* also failed shortly thereafter.

Around the same time that Hirsch-Houck Laboratories was establishing itself, in 1958, *Hi-Fi Mu-*

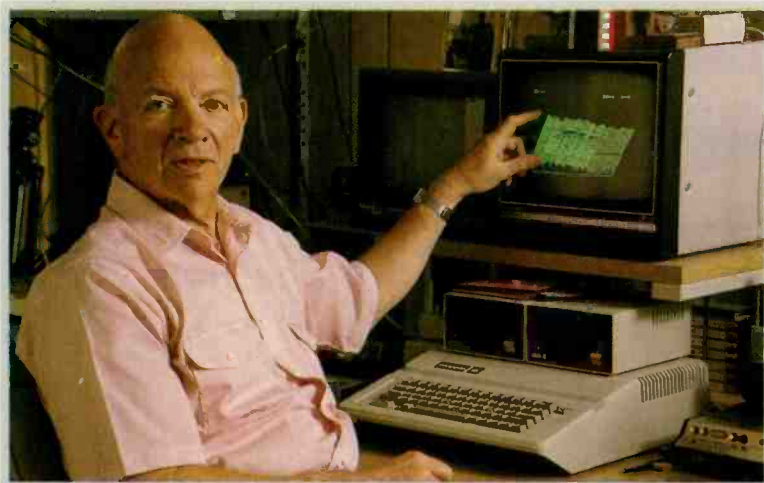
I can see that 'digital' is the catchword for now and probably the future. It's getting to be cheaper to do things digitally, and once something is done digitally, there's a tendency to do more whether it's necessary or not.



sic Review was founded by the Ziff-Davis Publishing Company. With the introduction of stereo, *Hi-Fi Music Review* quickly became *Hi-Fi/Stereo Review*—you now know it as STEREO REVIEW—and in 1961 the magazine made Hirsch-Houck Laboratories an offer it didn't refuse. Their first contribution, which appeared in the issue of October 1961, was a roundup of lab tests of phono cartridges made by ESL, Knight, Sonotone, General Electric, and Dual.

There was very little public acceptance or awareness of the audio field in those days. Hirsch remembers that if you mentioned hi-fi, people would look at you blankly and ask what it meant. There was no hi-fi advertising; it was strictly a hobbyist's activity. Most people bought their own equipment and built their own speakers. Hirsch wound his own crossover networks and built

There is no magic in this business at all. There is a great deal of ingenuity and a lot of truly brilliant design, but no magic. I certainly would not accept as gospel anything that anyone says about a product.



his own cabinets as well. The only speaker he ever bought was the AR-1, for \$93 on an accommodation sale (list price was \$186). He bought a Marantz 1A preamp the same way. That was a tremendous amount of money in those days, and the Klipschorn, then the reigning king of speakers, was selling for around \$700. But nothing else had as strong an impact on Hirsch as the AR-1.

"My AR-1 is unique," explains Hirsch. "Its serial number is 136—they started with number 100—and it was put out before they had printed their patent labels and instruction manuals. In those days the AR-1 was a 4-ohm speaker, but it was designed to work with a damping factor of 1. If your amplifier had

a high damping factor you could improve it by having a 4-ohm resistor in series with it to give it a damping factor of 1. The AR-1 had a built-in 4-ohm resistor for just that purpose. You just connected the amp to a different set of terminals on the back of the speaker. On mine the instructions were handwritten on the back by Henry Kloss and signed by him, so you can see why I tend to treasure that speaker. It still works fine, and every few years I drag it out and listen to it. The tweeter, by the way, was an 8-inch Altec 755A, Altec's version of a GE midrange, and it had a 12-inch acoustic-suspension woofer crossing over to the tweeter somewhere around 500 Hz."

Elsewhere in this issue Julian Hirsch reminisces about some products that he thinks were landmarks in the development of the audio industry. But he feels that it was the people who created those products who are responsible for the true

advancement of audio. He was constantly crossing paths with men such as Avery Fisher, H. H. Scott, Peter Pritchard, Paul Klipsch, Henry Kloss, Ed Villchur, Saul Marantz, Jim Lansing, and countless others. Few (if any) other writers currently active in this field can boast that kind of audio upbringing. Hirsch has seen, met, and heard it all, over a career spanning some thirty-odd years. But what is it that gets him up in the morning still as excited and enthusiastic about hi-fi as he was back in 1949?

"I can't really explain it," he says. "Sometimes I think I really must be crazy, a little off the deep end. I think, though, I do it by not getting all worked up over every little innovation that comes along. I am amused by today's way-out audiophiles and their eagerness to perceive everything new as being wonderful and marvelous. No one's going to thrill me by rearranging the buttons and lights on a panel.

"Long ago I took the viewpoint, which grew out of my engineering experience, that the circuit topology of anything is really of very little importance in the overall scheme of things. It's only important as it achieves a certain result, but with audio equipment that result may not have anything to do with what you hear. In other words, the particular combination of solid-state devices used to get a result is of moderate interest, but not a reason for choosing one component over another. I have always treated a component as a hypothetical black box with input terminals and output terminals, and all I do is put a signal into the input, measure the output, and compare the two. I don't care what's inside the box except in the most casual way."

That is one of the views with which Hirsch has infuriated people over the years. His critics also maintain that he has never met a speaker he didn't like. But if you ask him, he'll tell you he's run into quite a significant number of "dogs" over the years.

Hirsch would like it explained, however, that if his test reports give STEREO REVIEW readers a somewhat one-sided, rosy view of things, it's because he doesn't test products that are known or expected to be worthless or of doubtful value. "I keep telling people that I have nothing to do with the selection process," he says. "The choice of a product for test is made by an editor who has heard it and knows wheth-



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er it has any merit. From there on I take over and see what it does when it's tested."

Video is a subject that doesn't excite Hirsch much. He says he has seen and heard enough of it to know it can be enormously impressive, but that sort of entertainment just doesn't appeal to him. Although the hi-fi audio capability of videotape is very impressive, he thinks it is of little value to the serious recordist because of the impossibility of editing it properly except by tricky dubbing processes that continuously reduce the excellent original signal-to-noise ratio. Pointing out that not too many of us need to record with the full capability of a hi-fi VCR, much less a digital recorder, he would steer you toward a high-quality cassette deck featuring some circuit advancement such as HX Pro and a good advanced-formula tape and tell you that it's probably all you need.

This same practical approach colors Hirsch's view of the future of audio. He believes the future will bring us many more digital products, but he does not believe the average hi-fi enthusiast will need the capability provided by some of the digital components that will shortly become available to consumers.

"By my standards," says Hirsch, "much of the digital audio capability we now have is a case of overkill. I'm sure that digital audio tape (DAT) can and probably will be successful technologically, but I'm not sure how successful it will ultimately be in the market because for most people I don't think it offers much of a fundamental performance advantage over a good present-day cassette deck. Of course, audiophiles are not a monolithic group. There's the guy like me who does his recording at home and gets his live music by going to live performances; I'm not concerned about duplicating those performances at home, so a cassette deck is good enough for me. But there are guys who do a lot of live recording, and I can understand their urge to get something better, though I don't know just how much better digital recording is. It's not clear to me what the prime reason for the DAT format really is. It's clever and it's marvelous for what it does and for the size of the cassette, but after that"

"I can see that 'digital' is the catchword for now and probably the future. It's getting to the point



where it's actually cheaper to do things digitally instead of by analog means, and once something is done digitally there's a tendency to go ahead and do more whether it's necessary or not. I'm thinking in particular of many of the receivers that have been introduced recently. All they really need of a digital nature is a synthesized FM/AM tuner. But once manufacturers have the microprocessors in there, they realize that their capabilities go much further, and we get stuck with a host of marvelous features that many of us can live without. It's called progress, I think!"

Hirsch's reservations about some aspects of the big push for digital technology should not be interpreted as a lack of enthusiasm for the compact disc. He recognizes that its quality and convenience are wonderful and that the CD has given the audio industry just the shot in the arm it needed, but he does not see the need for a compact disc the ordinary consumer can record on. Even though the recordable CD-ROM (read-only memory) is just over the horizon, Hirsch can't imagine what anyone could possibly record at home that would require the resources of digital technology. "As far as the CD-ROM goes," he says, "I don't think that's the affair of consumer audio."

Whether you view Hirsch's attitudes about hi-fi's digital future, or hi-fi itself, as myopic, practical, or whatever, you should not underestimate his knowledge of and dedication to audio. And even with his reservations about some digital products and his hard-line attitude toward audio gadgetry in general, each time he's presented with the latest whiz-bang digital component he still reacts like a kid with a new

toy—or a grown man with a new Porsche. An example of this kind of enthusiasm is his report on the Yamaha DSP-1 digital sound processor elsewhere in this issue.

When I asked Hirsch if, after tracking the audio industry since Day One, he had any great message to those whose blood flows with the industry, his answer was a most emphatic "Yes!"

"I don't know how this is going to sit with people who are involved in the industry in sales, design, or advertising," he said, "but my message really goes back to my own beginnings in this field. My friends and I started out because we questioned the claims manufacturers made for their products. We formed our testing group because we didn't believe the things that were being said, and our tests convinced us that we were right in not believing them. I think people should continue to question claims, whether they are made by manufacturers or by anyone else.

"The way things are being presented today, I think people have to learn to trust their own judgment and their own hearing much more. Granted, it's a complicated field. You don't know what to buy, and you have to trust a salesman, or a friend, or a reviewer. But you should never abandon your common sense.

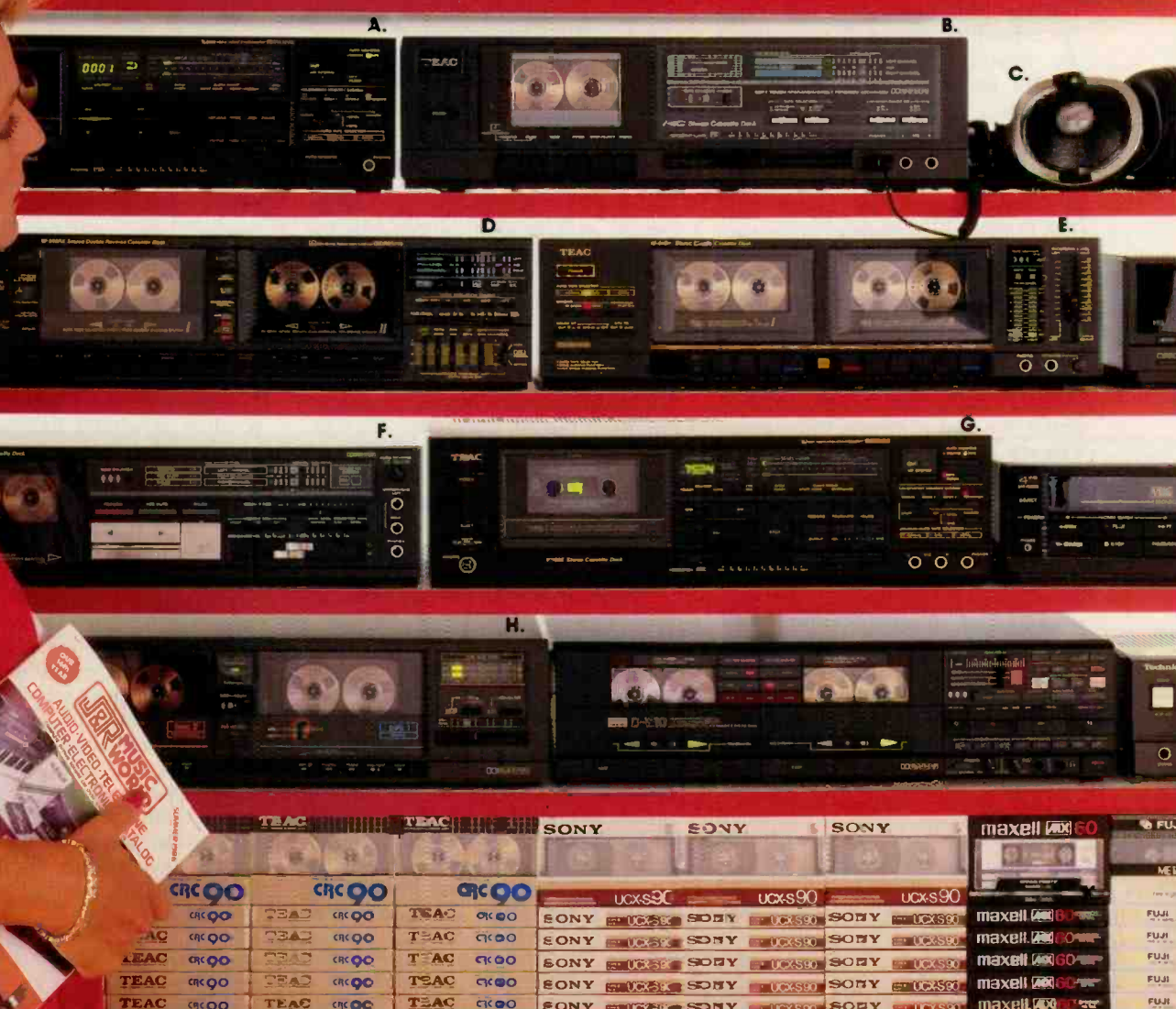
"As I've always said, there is no magic in this business at all. There is a great deal of ingenuity and a lot of truly brilliant design, but no magic. I certainly would not accept as gospel anything that any other person says about a product, and I would advise no other person to believe even me without question, because the best I can say about a product is what I have discovered about it for myself and what my own perception of it is.

"Over the years I've tested well over three thousand products, and in a surprising number of cases I can still remember what my response was to them. (Many others were not memorable and I've forgotten them.) We're dealing with a subjective field, and the real worth of any of these things is what we see and hear in them, not what someone else sees and hears in them. I just want to make an appeal to common sense. Don't go off the deep end. That's really the name of it. I can be very impressed with all this stuff, but I always wonder just how much it can contribute to the life of John Q. Public." □

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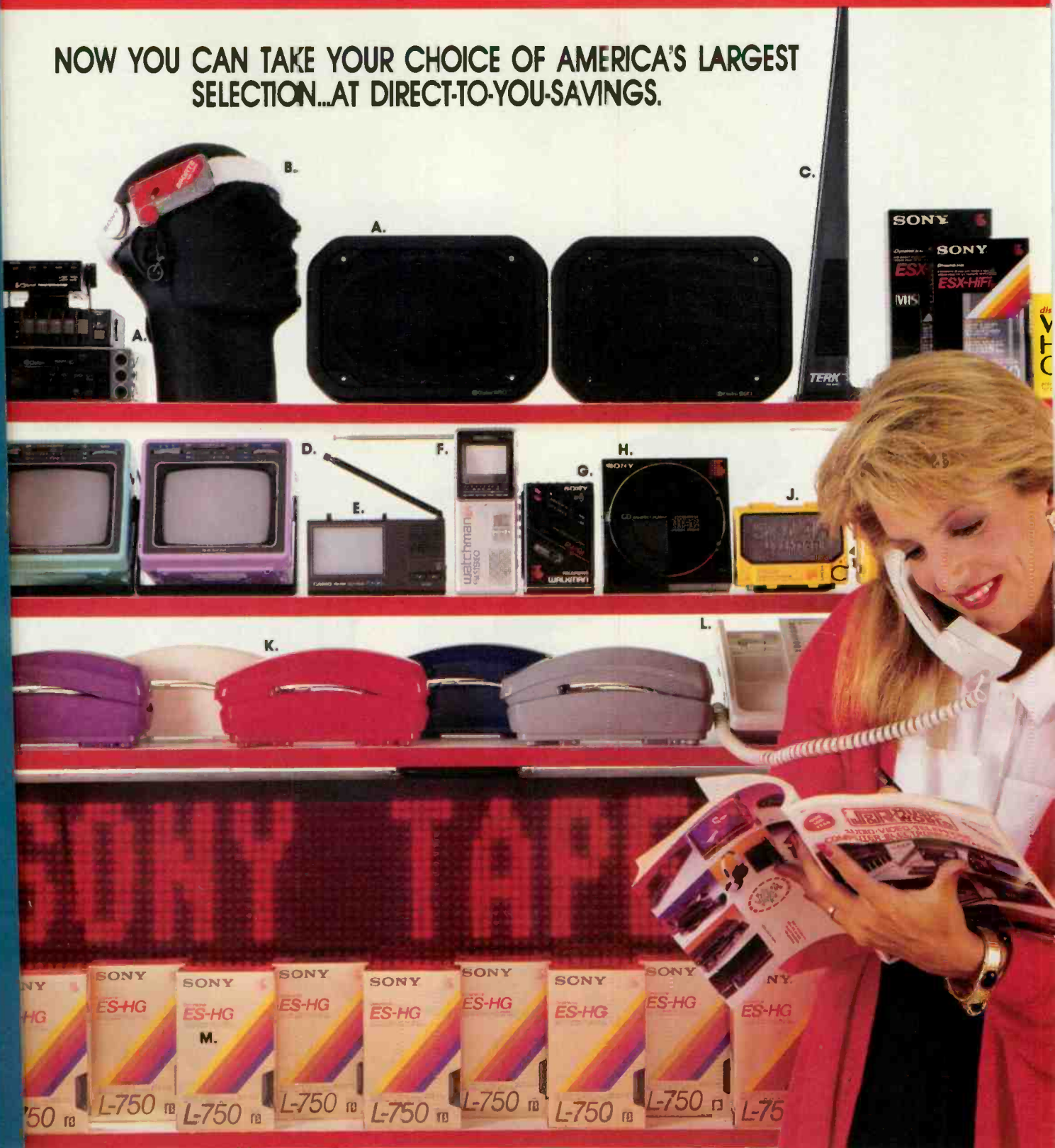
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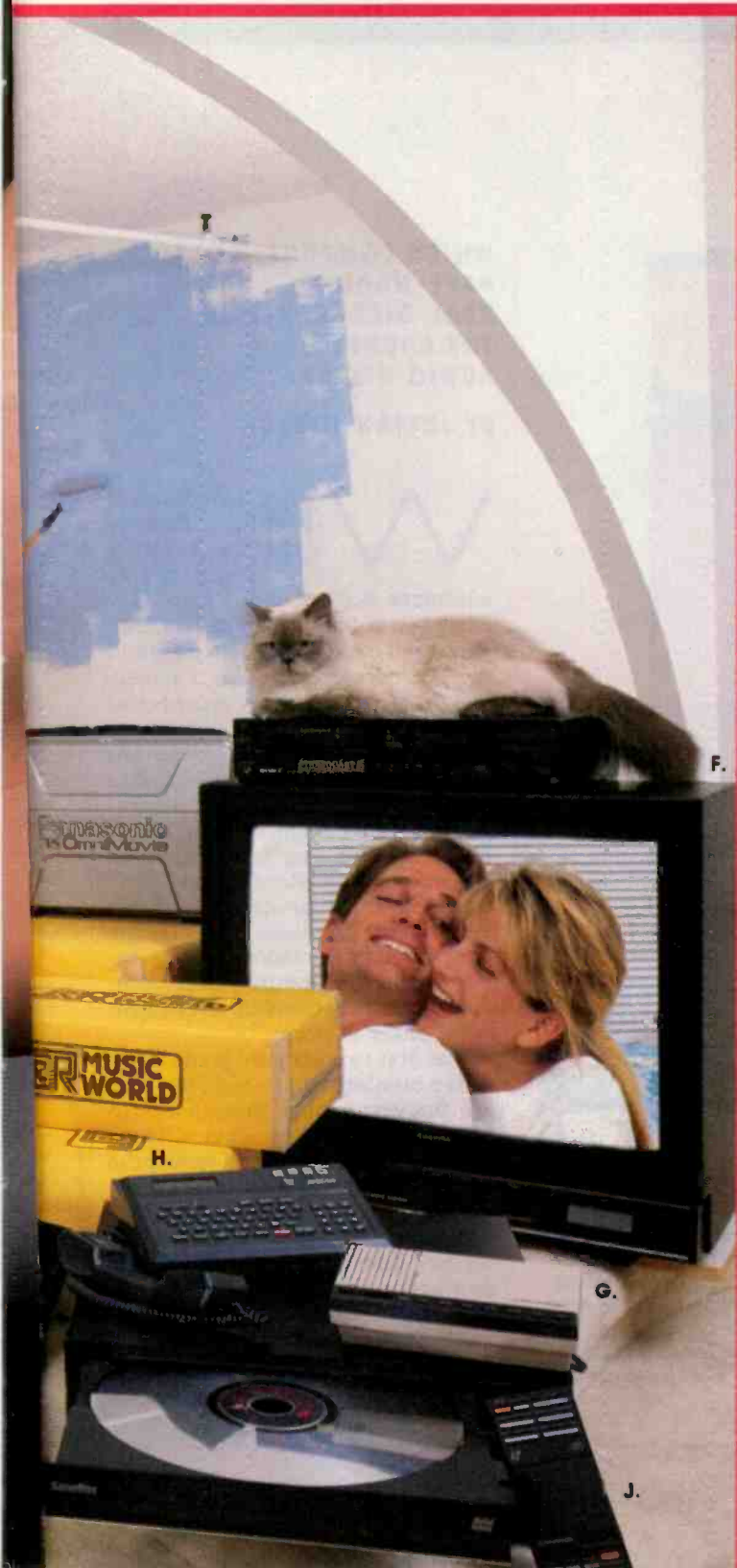
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JULIAN HIRSCH'S HI-FI LANDMARKS

1946

Paul Klipsch began manufacturing his folded-bass-horn speaker some forty years ago. The Klipschorn is still in production today, and its price has remained relatively unchanged since it was first introduced.



WHICH COMPONENTS HAVE MADE A REAL DIFFERENCE IN THE COURSE OF AUDIO HISTORY?

BY JULIAN HIRSCH

WHEN the editors of STEREO REVIEW asked me to write about some twenty landmark hi-fi components, I expected it to be an easy assignment. With well over 3,000 tests logged in the last thirty years or so, I merely had to skim through my records and memories—or so I thought!

The trip down memory lane was most enjoyable, but I soon became aware that most of the components I have tested were quite conventional, representing at best a minor evolutionary advance over their competitors and predecessors. I was looking for products that, in the light of history, made a lasting impact on the hi-fi industry or its technology. I finally came up with a generous baker's dozen.

The first two actually predate my active involvement in hi-fi, but they are unquestionably milestones. In 1946 or thereabouts, Paul Klipsch began manufacturing and selling the loudspeaker that bears his name, the folded bass horn he had designed and patented several years earlier. The Klipschorn is still in production, and its dollar price today is little more than it was in 1946! It was, and still is, a most impressive sounding loudspeaker, and I will never forget the first time I heard one.



1958

Harman Kardon's Solo II audio receiver, combining a tuner and an amplifier, was the forerunner of what has become the largest-selling type of hi-fi component.

Also in 1946, General Electric introduced its Variable Reluctance magnetic cartridge. Those of us who had previously depended on crystal cartridges, tracking at forces of many ounces and with a ragged frequency response limited to a few thousand hertz (we called them "cycles per second" then), were amazed at the GE cartridge's smooth top end, extending beyond 10,000 Hz, its 6-gram (0.2-ounce) tracking force, and its total absence of acoustic "needle talk." Its price, less than \$5 retail, permitted its use in mass-market record players. Hi-fi for the masses was fast approaching, although they didn't know that at the time.

In 1954, I heard the Acoustic Research AR-1 speaker at the New York Audio Fair, and I knew that its impact on the fledgling hi-fi industry would be enormous (this was even more apparent after I tested one in 1955). In terms of low-bass response and distortion, the AR-1 far surpassed any contemporary speaker of comparable size or price (\$185). Many people, including me, considered its bass performance superior to that of any other speaker, regardless of its size or price, then available for home use. Today there are many acoustic-suspension speakers, but the AR-1 was the first. It made high-fidelity sound a realizable goal for rooms and budgets of average size.

At about the same time, the Weathers FM pickup (mono, of course) was pointing the way to hi-fi record playing as we now know it. It was a delicate capacitance pickup (the "FM" was a bit of hype, being a by-product of the pickup's operation that had nothing to do with its superb quality) integrated with a unique low-mass tonearm and supplied with a small demodulator unit that delivered an equalized line-level output. In those days, 3 to 6 grams was considered a featherlight tracking force, so the 1 gram needed by the Weathers pickup was obviously a major advance. Like some "tweak" products of today, the Weathers had to be trimmed and retuned with disturbing frequency, and it usually made a number of trips to the factory for repair or modification during its lifetime. Its sound, however, was unmatched by any other pickup of the time (and by few since then).

In 1958 I tested the Harman Kardon Solo II. Its sole mark of distinc-

1960

The British Quad was the first commercially successful full-range electrostatic speaker. One of the sweetest-sounding speakers ever made, it remained in production until only a couple of years ago.



1961

When stereo first became available to the consumer, Koss was ready with the Koss Stereophone. It was the first good set of headphones wired for separate inputs to the left and right ears.

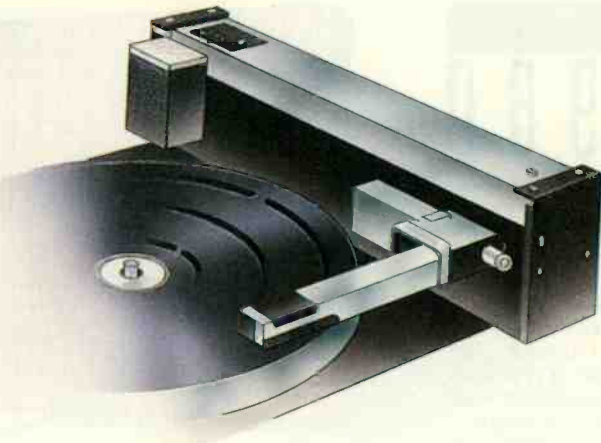
1962

Edgar Villchur's \$58 AR turntable outperformed the most respected turntables of the time. It remained on the market for many years.



1969

The Rabco SL-8 was the first commercially made, high-tech, servo-driven radial-tracking tonearm. It was finicky, but at its best it was a near-ideal tonearm.

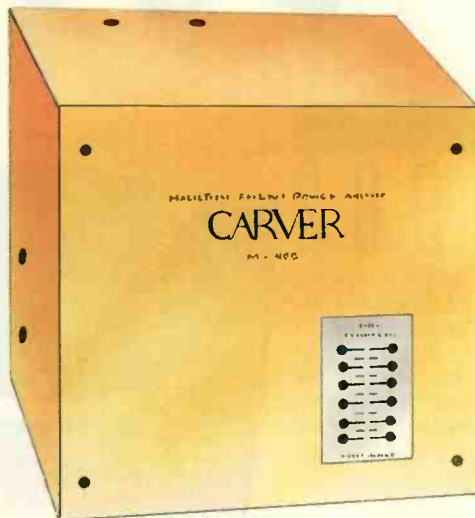


1971

The Advent 201 cassette deck was noteworthy for built-in Dolby B noise reduction and equalization for chromium-dioxide tape.

1980

The 200-watts-per-channel Carver M-400 was, and still is, one of the smallest and lightest amplifiers of its power rating. Carver's Magnetic Field circuit is still used in Carver amplifiers, and it remains unrivaled in its watts-per-pound ratio.



tion was in being the first hi-fi receiver (or one of the first). Prior to that time there were separate tuners and amplifiers, but this was the first unit I tested in which the two were combined. Although it was otherwise undistinguished, it was a forerunner of what would eventually become the largest-selling type of hi-fi component.

In 1960, Acoustic Research introduced the AR-3. In addition to having an improved version of the AR-1's bass driver, the AR-3 was the first speaker system to use dome radiators for the middle and high frequencies (earlier systems usually had cone drivers or sometimes horn-loaded compression drivers). In addition to its acoustic qualities, the AR dome driver—sometimes referred to as the “fried egg”—was more resistant to voice-coil burnout than small cone speakers. Today dome radiators are commonplace in speakers at most price levels.

The British Quad electrostatic speaker also made its appearance in 1960. It was, I believe, the first commercially successful full-range electrostatic speaker, and it remained in production until only a year or two ago. Despite its limitations in reliability, low-bass response, and dispersion, the Quad ESL was one of the sweetest-sounding speakers ever made (it was my favorite for many years).

The year 1961 saw my first test of a Koss Stereophone (I don't recall the model designation). There was little novel about these phones other than their stereo wiring, but until Koss did it, you could not buy reasonably good headphones wired for separate inputs to left and right earpieces. Of course, before stereo recordings became available, there had been no real need for such a product.

Not every memorable product was a success. The first all-transistorized amplifiers to reach the market, from Transistronics, were disasters. At that time silicon transistors were prohibitively expensive, so the TEC 15 and TEC 25 had to use germanium transistors. These notoriously heat-sensitive devices tended to “run away” and self-destruct with impressive consistency. In 1961 and 1962, you had to use a bit of imagination to visualize solid-state audio components that could compete with “good old reliable vacuum tubes.” The TEC amplifiers did show, if nothing else,

how compact and light such products could be, and I think they deserve honorable mention in spite of their untimely demise.

A more successful 1962 contribution to hi-fi was the AR turntable from Acoustic Research. Previously, a heavy platter and powerful motor were considered the necessary marks of a high-quality turntable. Edgar Villchur, AR's founder, showed that a light platter, belt-driven by a tiny motor and mounted together with the tonearm as a separate structure isolated from the base and external environment, could outperform the most highly regarded turntables of the time. Combined with a rather basic arm, the entire package initially sold for \$58, and it remained on the market for many years. Its basic design features have been incorporated into many of the most prestigious "high-end" turntables currently on the market, and, in a slightly revised form, it is back in the AR line.

The year 1969 saw the arrival of the Rabco SL-8, the first commercially made, high-tech, servo-driven radial-tracking tonearm. Designed by Jack Rabinow, one of the most prolific inventors of our time, it could be finicky, but at its best it was a near-ideal tonearm. There have been others since, including the bargain-basement versions found in some low-priced Japanese record players, but Rabco was there first. It is only fair to mention that the SL-8 was preceded by other radial arms, but they did not use servo drive. I recall the Bard Ortho-Sonic arm of 1958, which carried a mono cartridge at 6 grams and worked well, although its advantages over pivoted arms were debatable. Since the record groove did all the work of moving the cartridge, the arrival of stereo records and cartridges tracking at less than 2 grams sent this rugged arm, with its "V" configuration of ball bearings riding on a track, into obsolescence.

The Advent 201 cassette deck of 1971 was noteworthy for two things: built-in Dolby B circuits and equalization for chromium-dioxide tape. The Fisher RC-80B and Harman Kardon CAD-5 had similar features, but the Advent deck also used the mechanically operated but superbly reliable Wollensak tape transport and had user-accessible adjustments for levels and biases to insure compatibility with the Dolby system regardless of the tape used.

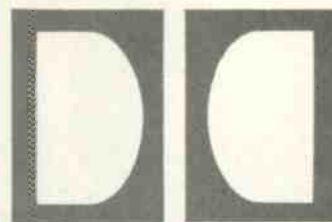
In a real sense, the Advent 201 helped make cassette recording a true high-fidelity medium. Mine still works perfectly, while many others have come and gone over the years.

In the earlier years of hi-fi, amplifiers rated at more than 50 watts were uncommon, and a rating of 100 to 150 watts was about the limit. In 1971, the 350-watt-per-channel Phase Linear 700, designed by Bob Carver, broke the power barrier, and it held the lead in the power race for some years. For the first time the audiophile could experience the added realism afforded by virtually limitless amplifier power. There are other high-power amplifiers nowadays, but few have matched or exceeded the capabilities of the Phase Linear 700.

Introduced in 1980, the 200-watts-per-channel Carver M-400 was, and still is, one of the smallest and lightest amplifiers of its power rating—and all its close rivals also carry the Carver name. Carver's Magnetic Field amplifier circuit is still used, in improved forms, in other Carver amplifiers and receivers. It remains unrivaled in its watts-per-pound ratio.

In addition to specific landmark products, there have been significant technological developments that have been incorporated into many components. One of these developments was the noise-reducing circuitry designed by Dolby Laboratories, which I consider was instrumental in making the tape cassette a viable hi-fi medium. The development of the cassette format by Philips was, of course, a prior requirement for this success, but without a universal and low-cost noise-reduction system the cassette could not have achieved its present state of performance and acceptance. Dolby B was the catalyst.

Finally, I consider the compact disc to be the most important recent audio development. Despite heated arguments about its merits and flaws, this joint creation of Philips and Sony has brought an awareness of hi-fi sound to the general public in a way not matched by anything else in recent years. It might be compared in its impact to the LP record, which in 1948 sounded the death knell for the 78-rpm record, except that the present size of the hi-fi industry gives the CD a potentially far greater effect on people's lives. □



1970's

One of the most significant audio developments ever was the noise-reducing circuitry designed by Dolby Laboratories. Dolby technology was instrumental in making the tape cassette a viable hi-fi recording medium.



1980's

The compact disc is the most important audio development in recent years. Despite arguments about its merits and flaws, this joint creation of Philips and Sony has brought a greater awareness of high-fidelity sound to the general public.



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AUDIO SYSTEMS

Stereo Review's critics choose the outstanding current releases

STEVE EARLE'S IMPRESSIVE "GUITAR TOWN"

STEVE EARLE, like Dwight Yoakam before him, is one of the new breed of Nashville rebels whose music is too rough-edged and real for the wonderful folks who bring us Kenny Rogers. Unlike Yoakam, though, Earle is not a traditionalist, not even, strictly speaking, really a country artist. He is an authentic, unrepentant hillbilly, but what he's doing is sneaking up on rock-and-roll territory.

"Guitar Town," Earle's first album, makes this fairly explicit. His songs deal, in part, with traditional country themes—faithless lovers, the continuity of family life, poverty and hard times—but from a remarkably sophisticated and modern perspective, and he can be mordantly funny in a way that would never have occurred to, say, Ernest Tubb.

Earle: sneaking up on rock



Writing about the break-up of a relationship, in *Goodbye's All We've Got Left*, for example, Earle observes, "I don't think that it'll get any better/So maybe you could just write me a letter./And I could open it when I'm stronger/Another ten or twelve years, maybe longer."

The music behind all this is similarly out-of-kilter. Even a traditional-sounding song like *Hillbilly Highway*, powered by the diamond-hard, evocative lines of snappy young guitarist Richard Bennett, revs up into rock-inflected overdrive. And *Good Ol' Boy*, which at first seems to be a standard, if well-written, country lament about the state of the economy ("Just my luck," Earle sings, "I was born in the land of plenty, now there ain't enough"), boasts a bridge section that John Cougar Mellencamp might kill for.

The whole album's like that—not quite country, not quite rock—and while a lot of people (the Long Ryders come to mind) have been chasing this kind of Eighties synthesis, Earle is the first one who doesn't strike me as at all self-conscious. If there's any justice, "Guitar Town" will get played on both country and rock radio, but even if it doesn't, it's undeniably one of the more impressive debuts of the year. And the digital sound is aces. *Steve Simels*

STEVE EARLE: *Guitar Town*. Steve Earle (vocals, guitar); Richard Bennett (guitar); Emory Gordy, Jr. (bass); other musicians. *Guitar Town*; *Goodbye's All We've Got Left*; *Hillbilly Highway*; *Good Ol' Boy (Gettin' Tough)*; *My Old Friend the Blues*; *Someday*; *Think It Over*; *Fearless Heart*; *Little Rock 'n' Roller*; *Down the Road*. MCA ◊ MCA-5713 \$7.98, © MCAC-5713 \$7.98.

A MAJESTIC DIDO FROM JESSYE NORMAN

THE new Philips recording of *Dido and Aeneas*, in which Jessye Norman and Thomas Allen sing the title roles, is sheer perfection. Not since 1952, when Kirsten Flagstad made the historic recording of Purcell's



Norman: subtlety and skill

"opera perform'd at Mr. Josias Priest's boarding-school at Chelsey by young gentlewomen," has there been such a complete realization of this extraordinary work by the Father of English Opera.

Commissioned to demonstrate the musical and dramatic abilities of students, *Dido and Aeneas* is truly a small giant. Small only because it requires less than sixty minutes to perform; a giant because it embodies those virtues by which operatic masterpieces on a grander scale are judged—an economical and skillful libretto by Nahum Tate (no mean dramatist himself, made poet laureate in 1692), lively and contrasting action, cleanly etched characterization, and, most important, music that, while complementing the poetry, creates and sustains mood and character.

Playing the 1952 recording alongside the present one, I frequently found it difficult, if not impossible, to distinguish Flagstad from Norman, so rich, so warm, so secure are the voices of these great artists. There is a signal difference, however. Whereas Flagstad creates a Dido of calm, stately, and ultimately resigned queenliness, Jessye Norman's Dido is finally stripped of regality to stand a woman denied, bereft, and desperate. These effects, subtly achieved, are apparent in her inflection of line and her coloring of tone. Norman's performance, beautifully sung, is always skillfully conceived in dramatic terms.

Thomas Allen's rich and supple

ZOE DOMINIC/PHILIPS

ALAN MESSER

baritone makes Aeneas a convincing character, one combining weakness and bragging charm. Aeneas, who is told by a spirit what he will do and then, in leaving Dido, does it, makes less than a credible lover, but perhaps the circumstance of Purcell's commission led the composer to expend the greater effort in creating the womanly Dido.

In the 1952 recording, a young Elisabeth Schwarzkopf sings the role of Belinda, Dido's nurse-companion. The new performance offers Marie McLaughlin, whose voice is a bit warmer and fuller than Schwarzkopf's. Although her coloratura in the passage "Pursue thy conquest, Love!" lacks the excitement of Schwarzkopf's, McLaughlin creates a sympathetic Belinda, torn between her own natural gaiety and her concern for Dido.

Patricia Kern's Sorceress evokes an appropriate eeriness, and Patrick Power's cockney sailor is delightful, an original and amusing touch that fits nicely into Purcell's design. Derek Ragin contributes a clear-voiced Spirit, and the remaining soloists acquit themselves very well indeed, as does the chorus and orchestra.

Special plaudits go to Raymond Leppard, who draws from all concerned a finely honed ensemble, crisp and well focused. Such a crystalline, exquisitely balanced performance is no mean achievement. Nor is the beautiful sound of the recording itself. Enthusiastically recommended. *Robert Ackart*

PURCELL: *Dido and Aeneas*. Jessye Norman (soprano), Dido; Thomas Allen (baritone), Aeneas; Marie McLaugh-

lin (soprano), Belinda; Patricia Kern (mezzo-soprano), Sorceress; Patrick Power (tenor), Sailor; Derek Ragin (countertenor), Spirit; others. Chorus; English Chamber Orchestra, Raymond Leppard cond. PHILIPS ● 416 299-1 \$10.98, © 416 299-4 \$10.98, © 416 299-2 no list price.

GRIT AND GLITZ IN NEW SONGS BY TONIO K.

TONIO K. is the funniest serious songwriter in America. Readers with long memories may recall that I declared each of his previous LP's to be "the greatest record ever made," but since this is a conservative era I'm going to restrain myself on the subject of "Romeo Unchained," K.'s latest effort on What Records. Let me simply say up front that while it retains the sardonic wit and general rock-and-roll savvy of its predecessors, it also reflects a certain optimism about the state of things in the closing quarter of the twentieth century. There's a newfound subtlety and vulnerability in the vocals, too, and a thoroughly modern production gloss that doesn't hit you over the head with how hip it is. In short, "Romeo Unchained" is the kind of album that will sound good on MTV and make you think anyway.

As the title suggests, the album deals with relationships between the sexes. K. has been down this particular cul-de-sac before. He is, after

all, the songwriter who once threatened an unconstant lover with the prohibitive cost of a private hospital room. But where previously his musings had a misogynistic edge (tempered with a certain measured irony, to be sure), here he seems to be taking the woman's side. *Living Doll*, for example, is a wry and compassionate account of a young girl's progress from victimization to independence, and *You Don't Belong Here*, a semi-surrealist tale of a singles-bar encounter, absolutely skewers the self-pity and self-destructiveness of its male character.

Since this is a Tonio K. album, of course, there are also some inspired japes with only passing relevance to the grand theme. *Romeo and Jane* is a wonderful meditation on the unlikely romance between characters created by Shakespeare and Edgar Rice Burroughs ("I've heard of unfaithful lovers, but this is outrageous!" K. huffs). And at least one number, *I Handle Snakes*, dispenses with the theme altogether. A sort of heavy-metal theological treatise, it features such inspirational verse as, "I handle snakes/I hug 'em and I kiss 'em/I handle snakes/And if they kill me I'll sure miss 'em."

Musically, meanwhile, the album is as sharp as a tack. The songs are concise, tuneful mixtures of blues-based guitar grit and electronic glitz. K.'s singing achieves heretofore unsuspected levels of nuance and feeling. The various supporting players, including co-producer T-Bone Burnette on *You Will Go Free* and what sounds like an uncredited Maria McKee of Lone Justice on *You Belong with Me*, perform as if their lives depended on it. Altogether, "Romeo Unchained" is a thrilling piece of vinyl, and as Robert Schumann is reputed to have observed upon first hearing Chopin, "Hats off, gentlemen." Let me add, at the risk of repeating myself, "This is the greatest album ever recorded."

Steve Simels

Tonio K.: unsuspected levels of nuance and feeling



TONIO K.: *Romeo Unchained*. Tonio K. (vocals, guitar); other musicians. *True Confessions*; *Perfect World*; *Romeo and Jane*; *You Belong with Me*; *Impressed*; *I Handle Snakes*; *Emotional War Games*; *Living Doll*; *You Don't Belong Here*; *You Will Go Free*. WHAT/A&M WR-8340 \$8.98, © WC-8340 \$8.98.

RATTLE'S NEW BRITTEN COLLECTION

OVER the past three years, Angel has issued three miscellanies of orchestral and concerted works by Benjamin Britten, each featuring one or more pieces new to records. The latest collection, which includes the *Sinfonia da Requiem* and *An American Overture*, is the most interesting of them all.

The *Sinfonia da Requiem*, composed by Britten in memory of his parents, was the most substantial product of his American sojourn during the early years of World War II. Britten himself conducted two recordings of the work, issued over here by London. Both are now deleted, but the two versions conducted by André Previn are still available.

In the new Angel recording, however, Simon Rattle and the City of Birmingham Symphony Orchestra hold their own point-for-point against the competition in a performance of fiery grandeur. The *Lachrymosa* has a final climax that can be described simply as soul-shattering, the *Dies Irae* is the very embodiment of stark terror, and the *Requiem aeternam* brings blessed catharsis. Moreover, the digital recording is a stunning *tour de force*.

The other U.S.-composed work here was originally titled *Occasional Overture* but is now called *An American Overture* to avoid confusion with the other work of that name, Opus 38. Written for Artur Rodzinski and the Cleveland Orchestra in 1941, it was not only never performed but was actually lost. The score turned up finally at the New York Public Library's Music Division, and it was given its premiere in Birmingham under Rattle in 1983. Britten himself had totally forgotten having written the piece and was willing to acknowledge it only after recognizing his handwritten notation. Nonetheless, the music is fascinating, and in its amalgam of solemnity and brilliance it seems to me to combine elements of Holst and Copland.



CHRISTIAN STEINER/ANGEL

Rattle: fiery grandeur

The *Occasional Overture* of 1946 is a splashy, exuberant work composed for the inauguration of the BBC's Third Programme. It was withdrawn by the composer following the broadcast premiere, under Sir Adrian Boult, and was resurrected in 1983 by way of a concert premiere by Raymond Leppard and the Chicago Symphony.

Most substantial of the smaller works here is the five-movement Suite on English Folk Tunes, which takes its subtitle from elegiac lines by Thomas Hardy. The third movement was written in 1966 for the opening of the Queen Elizabeth Hall in London, and it was a badly ailing composer who finished the other four movements in 1974—and who heard the first full performance at Aldeburgh in June 1975, eighteen months before his death. The work is dedicated to the memory of Percy Grainger, whose folk-song arrangements Britten greatly admired.

The recorded sound is absolutely first-rate throughout. In terms of both performance and engineering, this release is among the very best that Angel has produced with Simon Rattle and his Birmingham orchestra.

David Hall

BRITTEN: *Sinfonia da Requiem, Op. 20; An American Overture, Op. 27; Occasional Overture, Op. 38; Suite on English Folk Tunes, Op. 90* ("A time there was . . ."). City of Birmingham Symphony Orchestra, Simon Rattle cond. ANGEL ● DFO-38236 \$11.98, © 4DS-38236 \$11.98, © CDC-47343 no list price.

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- **JETHRO TULL: *Benefit***. CHRYSALIS VK 41043. "A rock-age marvel" (Best of Month, August 1970).
- **BILLY JOEL: *Streetlife Serenade***. COLUMBIA CK 33146. "Rings with real, if slightly lopsided, truth" (Best of Month, February 1975).
- **ELTON JOHN: *Caribou***. MCA MCAD-37065. "Good, lightweight English pop" (October 1974).
- **KOOL AND THE GANG: *As One***. MERCURY 822 535-2. "Revitalizing dance music" (February 1983).
- **THE MOODY BLUES: *Long Distance***. THRESHOLD. 820 105-2. "One of their best" (October 1981).
- **SANTANA**. COLUMBIA CK 30595. "Furious energy" (Best of the Month, January 1972).
- **GEORGE THOROUGHGOOD AND THE DESTROYERS: *More***. ROUNDER CD-3045. "Terrific fun" (April 1981).

CLASSICAL

- **BEETHOVEN: *Symphony No. 3***. Kleiber. LONDON 414 626-2. One of the classics (recorded in 1959).
- **CHOPIN: *Waltzes***. Lipatti. ANGEL CDC 47390. Recorded in France in 1950 at the now-legendary pianist's last public concert.
- **GILBERT AND SULLIVAN: *The Mikado***. D'Oyly Carte. LONDON 417 296-2 (two CD's). "Wonderful" (July 1975).
- **MAHLER: *Symphonies (complete)***. Bernstein. CBS MK 42194 through M3K 42200 (thirteen CD's). Highly charged performances (released as a set on LP in 1967).
- **OFFENBACH: *La belle Hélène***. Norman; Plasson. ANGEL CDCB-47156 (two CD's). "Every moment sparkles" (Best of Month, May 1986).
- **PUCCINI: *Manon Lescaut***. Callas; Serafin. ANGEL CDCB-47392 (two CD's). More prime Callas (recorded in 1959).
- **RESPIGHI: *Ancient Airs and Dances***. Marriner. ANGEL CDC-47116. "Suave" (September 1976).

Discs and tapes reviewed by

Chris Albertson

Phyl Garland

Alanna Nash

Mark Peel

Peter Reilly

Steve Simels

ANITA BAKER: *Rapture*. Anita Baker (vocals); vocal and instrumental accompaniment. *Sweet Love; You Bring Me Joy; Caught Up in the Rapture; Been So Long; Mystery*; and three others. ELEKTRA 60444-1 \$8.98, © 60444-4 \$8.98.

Performance: *Super*
Recording: *Fine*

During the past year and a half, Whitney Houston and Sade have zoomed from obscurity to conspicuous success as popular singers with roots in the soul tradition, but now they'll have to move over just a bit to make room for a third exceptional artist who fully deserves the sort of acclaim they have received. Her name is Anita Baker. Baker's distinction is that she possesses not only a remarkably lustrous voice but also the kind of taste and intelligence that mark her as one of the finest vocal interpreters to emerge in quite some time.

In her new Elektra album, "*Rapture*," Baker uses lyrics and melody to fashion dramatic sound pictures of human emotions. She sings as though she were turning her heart inside out with every utterance. In depth of feeling, sensitivity, and conviction, she is comparable with such singers as Barbra Streisand, Gladys Knight, and Aretha Franklin. But Baker doesn't sound like any of them. Her instrument is distinctively her own, and she uses it with a consummate sense of phrasing. The texture is silken, yet rich and full-bodied, with never a hint of strain. While some might say there's a touch of gospel in her style, its main ingredients are drawn from jazz, popular ballads, and the most sophisticated rhythm-and-blues.

Baker was actively involved in all phases of the creation of "*Rapture*," serving as executive producer, writing some of the songs, even playing keyboards on one track, and her good taste prevails throughout. While she is clearly better than some of the material she sings, all of the songs have a certain appeal. *Sweet Love, Been So Long*, and *Watch Your Step* are among the better

ones, but everything else pales beside *You Bring Me Joy*. Weaving her way through the haunting melody and etching each note with passion, Baker does, indeed, induce rapture in an unforgettable vocal interpretation. Anyone who can make this sort of musical magic is bound to have a brilliant future. P.G.

THE BLOW MONKEYS: *Animal Magic*. The Blow Monkeys (vocals and instrumentals). *Digging Your Scene; Animal Magic; Wicked Ways; Sweet Murder; Aeroplane City Love Song*; and six others. RCA NFL1-8065 \$6.98, © NFK1-8065 \$6.98.

Performance: *Unmemorable*
Recording: *Okay*

Here's yet another act purveying the effete, post-disco British r-&-b that is all the rage these days, a music inhabiting a space somewhere between bad Culture Club and bad Spandau Ballet (the latter admittedly a redundancy). Dr. Robert, the photogenic pretty boy who writes the material and fronts the band, has been hailed as the reincarnation of Marc Bolan, which is somewhat apt, but it should be noted that on *Wicked Ways*, one of the group's recent hits, he sounds more like George Harrison having a snit in the Material World. On the rest of the album he contributes reasonably inventive guitar work but otherwise carries on with all the soul and passion of a large herring. S.S.

GEORGE CLINTON: *R&B Skeletons in the Closet*. George Clinton (vocals); Stephen Washington (bass, guitar, trumpet, keyboards); vocal and instrumental accompaniment. *Hey Good Lookin'; Do Fries Go with That Shake!?*; *Mix-Master Suite*; and four others. CAPITOL ST-12481 \$8.98, © 4XT-12481 \$8.98.

Performance: *Chaotic*
Recording: *Unsubtle*

George Clinton is one of the strangest people making music today, and possibly the funniest. He is also the conscience of funk, and "*R&B Skeletons in the Closet*" is his manifesto against the evils of crossover—commercial tendencies that dilute, homogenize, and otherwise bleach funk of its essential nastiness.

"*R&B Skeletons*" comes with a label warning the squeamish would do well to heed: it contains "illicit drug use, improper grammar and/or slang, Communist agitator lyrical overtones, welfare fraud, voodoo cultism, and Bambezi fertility rites." It also contains the best pick-up line of 1986 ("Do fries come with that shake?") and is infected with the famous P-Funk Beat, an unrelenting, irresistible pulse that won't go away even after the record's finished. On top of the Beat, Clinton dumps the

last two years' accumulation of musical mistakes, mannerisms, and clichés, snippets of show tunes, TV ads, and Top 40 references, together with whatever his usual gang of wackos—about thirty of them—feel like playing at that moment. Somehow, it all works. Try it at your next party. M.P.

NEIL DIAMOND: *Headed for the Future*. Neil Diamond (vocals); instrumental accompaniment. *Headed for the Future; I'll See You on the Radio (Laura); Stand Up for Love; Love Doesn't Live Here Anymore; The Man You Need*; and five others. COLUMBIA OC 40368, © OCT 40368, no list price.

Performance: *Diamond sharp*
Recording: *Assertive*

Despite the title of the album and the hard-driving, exuberant title song, which leads off everything, Neil Diamond's newest release finds him mostly holding firm to the formulas that have been successful for him in the past. Could be his millions of fans want it just that way—even if some of us would welcome a bit more adventurousness now and then.

Still, there's no denying the emotive force Diamond brings to his particular brand of forlorn ballads. The worthiest originals here in that familiar mode include *The Story of My Life* and *Me Besides You* (the latter a collaboration with Burt Bacharach and Carole Bayer Sager). Some of the other tracks, in the hands of a less dynamic performer than Diamond, would be instantly forgettable, especially the disappointing *Lost in Hollywood*, co-written with Stevie Wonder. Roy Henning

THE DRAMATICS: *Somewhere in Time (A Dramatic Reunion)*. The Dramatics (vocals); instrumental accompaniment. *Dream Lady; Razor Blade; One Love Ago; Show Me What You Got*; and five others. FANTASY F-9642 \$8.98, © FC-9642 \$8.98.

Performance: *Together again*
Recording: *Satisfactory*

Although the Dramatics were never quite in the top rank of male soul groups during the Sixties and Seventies, they enjoyed a vogue among those with a taste for solid vocal harmonies and spirited rhythm-and-blues-based material. "*Somewhere in Time*" is their first album since they disbanded in 1980, and it shows they've lost none of their verve and musical cohesion. Among the best songs here are *When Love Is Over*, which displays the group's fine sense of vocal interplay, and *Days of Yea and Nay*, a love ballad. But the real highlight is a medley of their old hits—*Somewhere in Time, Fell for You, and Girl, Stop Your Weeping*. While the album is probably not distinctive enough to win

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the Dramatics many new followers, it should bring back memories to anyone who remembers their early days. P.G.

STEVE EARLE: *Guitar Town* (see Best of the Month, page 99)

FORESTER SISTERS: *Perfume, Ribbons and Pearls*. Forester Sisters (vocals); instrumental accompaniment. *100% Chance of Blue; Heartache Headed My Way; Somebody's Breakin' a Heart; That's Easy for You to Say*; and six others. WARNER BROS. 25411-1 \$8.98, © 25411-4 \$8.98.

Performance: *Peppy*
Recording: *Good*

The Forester Sisters are sometimes referred to as Warner Bros.' answer to the Judds, who are on RCA Records, and the Whites, who record for MCA. But the Forester Sisters, who were nominated for a Grammy last year with their first album—this is their second—are neither as progressive as the Judds nor as traditional as the Whites. They are also not nearly as interesting nor as overtly talented, since none of the four Foresters has a strong, distinctive voice to rival Wynonna Judd's, and their harmony is not as unmannered as Cheryl and Sharon White's.

The majority of the songs the Foresters sing here have a contrived, formulaic country-pop veneer. What they do to the Supremes' *Back in My Arms Again* is unprintable in a family magazine, but suffice it to say that the voices of the Forester Sisters seem totally unconnected to either their heads or their hearts. On the other hand, they're a good singles group, with decided country radio presence and an ear for pleasant, commercial sounds. But a copy of the Judds, or possibly the Whites? We're not even talking the same league. A.N.

PETER GORDON: *Innocent*. Peter Gordon (tenor sax, clarinet, synthesizers, vocal); David Van Tieghem (drums, percussion); vocal and instrumental accompaniment. *Romance; The Day the Devil Comes to Getcha; The Double; That Hat; St. Cecilia*; and five others. COLUMBIA BFM 42098, © BFT 42098, no list price.

Performance: *Entertaining*
Recording: *Excellent*

It took me a little time to warm up to Next Wave saxophonist Peter Gordon's "Innocent," but I'm glad I stuck it out. The problem was two avant-garde-with-a-capital-A tracks—*The Day the Devil Comes to Getcha*, with idiosyncratic lyrics by Laurie Anderson that muscle Gordon's tepid rap-funk right off the record, and *The Hat*, which is also undone by a needlessly obtrusive vocal. Once you get past those two losers,

PETER GABRIEL

PETER GABRIEL performs with an intensity and absorption you'd expect to find only among evangelists, anarchists, and the insane. Timed to coincide with Gabriel's Amnesty International concerts, his new album, "So," is no exception. At first blush, its powerful rhythmic cadences, churning counterpoint, and cracked, feverish vocals seem to signal an even greater fervor, as if Gabriel had embraced a new cause he was burning to share.

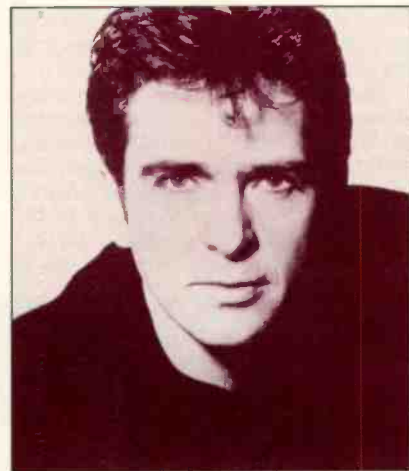
But "So" is a problematical record. Gabriel has grown too dependent on a few stylistic signatures—the double-tracked vocals shouted over a thicket of tribal drumming and the dark electronic bottom created by the constant presence of a Fairlight. Melody and harmony are, for all practical purposes, absent. Tones rise and fall, to be sure, but rhythm is the heart, brain, bone, and muscle of this music. Gabriel puts layers of electronics between himself and the listener (this record sounds as if it had been recorded through the walls, then amplified up to listenable levels), and his music settles into a kind of black funk, drained of all brightness and color.

The lyrics, too, fall short of Gabriel's best work. On "Security," he re-created Carl Jung's transcendental experience with an African tribe, then led us up the top of a mountain as an old Indian chief kept a final appointment with his gods. "So" takes us nowhere. Three love songs with all the charm and intimacy of a Sam Shepard play are sung with a rapt passion that would scare off most women. The fairly pat subject matter of songs like *Big Time*, a skeptical look at the trappings of success, and *Don't Give Up*, a lifeless duet between Gabriel and Kate Bush about a man whose homeland has been devastated by war,

however, you begin to discover how imaginative a composer Gordon is, and how daring an improviser.

"Innocent" ranges from the cheery, tuneful funk of *Afternoon Drive* to the dark, Zappa-like orchestration of *The Announcement*. But even when the music is light, Gordon's sax improvisations keep things off balance. On *Romance*, for instance, Gordon cuts in on a playful flute melody with a manic tenor-sax attack launched from both ends of the instrument's registers.

Shifting rhythmic gears without notice is one of Gordon's signatures. So is his sense of humor. The farfisa obbligation of *Diamond Lane*, Dave Van Tieghem's use of toy ray guns as percussion instruments on *The Announcement*, the horrific screams (created on a Fairlight



wouldn't have made it onto a better Gabriel album.

Still, there is an undeniably powerful presence at work here. Even second-rate Gabriel is charged with a furious inner energy very few artists are capable of. Gabriel's side men—the wonderfully facile Tony Levin on bass, guitarist David Rhodes (who plays like a percussionist by nature), Jerry Morrata and Manu Katché on drums—can do this stuff blindfolded by now. "So" is seamless, almost effortless. But it's not for lack of effort that the album comes up short. Rather, it's the dimming of Gabriel's white-hot vision. Mark Peel

PETER GABRIEL: *So*. Peter Gabriel (vocals, piano, CMI); Tony Levin (bass); David Rhodes (guitar); Jerry Morrata, Manu Katché (drums); vocal and instrumental accompaniment. *Red Rain; Sledgehammer; Don't Give Up; That Voice Again; In Your Eyes; Mercy Street; Big Time; We Do What We're Told. This Is the Picture* (cassette and CD only). GEFEN GHS 24088 \$8.98. © M5G 24088 \$8.98, © 24088-2 no list price.

CMI) that punctuate *Psycho*—all are evidence of a musical sensibility that approaches avant-garde as something that should be entertaining rather than instructive or mind-expanding. Recommended. M.P.

DOBIE GRAY: *From Where I Stand*. Dobie Gray (vocals); vocal and instrumental accompaniment. *That's One to Grow On; From Where I Stand; In the Family; Keep What We Had Going; The Dark Side of Town*; and five others. CAPITOL/EMI ST-12489 \$8.98, © 4XT-12489 \$8.98.

Performance: *The real thing*
Recording: *Very good*

Dobie Gray, of *The In Crowd* and *Drift Away* fame, has for the past eight years

been living in Nashville and working on his songwriting. Gray's hits have usually come far apart—the aforementioned songs were recorded over a seven-year span—and his new album proves that in the music business, especially in country music, you can be a certified corpse one day and a desirable property the next.

This isn't really so much a country album as it is a slightly updated version of Gray's stylized country-pop-blues, with heavy emphasis on compelling, intelligent ballads. Gray has always been a brilliant, cathartic vocalist, and finally he has an entire album of material that lets him show it. The central theme is

chord heavy-metal guitar solos and was intrigued by the comparative complexity and inventiveness of "jazz" improvisors. While some fusion still survives, most of its listeners grew tired of the noise and affectation and moved on to serious jazz or "New Age" or back to rock.

Actually "The Early Years" isn't an altogether accurate name for these recycled tracks from Jan Hammer's solo albums for Nemperor. By the time Hammer had left the Mahavishnu Orchestra and begun making records on his own, his reputation had already peaked. If anything, his solo albums only served to diminish his popularity.



Journey: (from left) Steve Perry, Jonathan Cain, and Neal Schon

emotional honesty, often at a mammoth price, such as a lifetime of suffering—just the ticket to let Gray's expressive baritone dig in and take over your central nervous system. There's plenty of upbeat stuff, too. All of it is well written, and it's complemented by Harold Shedd's even-handed production. In short, a recording of uncommon integrity and power. *A.N.*

JAN HAMMER: *The Early Years*. Jan Hammer (keyboards, synthesizers, percussion); instrumental accompaniment. *The Seventh Day; Plants and Trees; Bambu Forest; Oceans and Continents*; and four others. NEMPEROR FZ 40382, © FTZ 40382, no list price.

Performance: *Fidgety*
Recording: *Good*

This rather blatant attempt to cash in on Jan Hammer's return from the dead as maestro of *Miami Vice* is a walk down memory lane for anyone who remembers the late, lamented music form known as "jazz-rock fusion" or just "fusion." Fusion had tremendous appeal for an AOR audience that was growing tired of the same old three-

Most of these tracks swing between spacy, synthesized, greeting-card melodies and rapid-fire keyboard diddling. In retrospect, Hammer was no more or less corny than most fusion musicians. If his attempt to re-create "The First Seven Days" (from which half of "The Early Years" is taken) is pompous and silly, it's not nearly so laughable as a typical Chick Corea album from the same era.

Hammer's music was often pretty heavy, but "The Early Years" makes you appreciate how clean his sound was compared with the dense, amphetamine onslaughts of the Mahavishnu Orchestra. It's also clear how Hammer was to influence Jeff Beck's two extraordinary comeback albums, "Blow by Blow" and "Wired." In Beck's hands, jazz-rock became a springboard for electrifying improvisations. It wasn't so fiery or brilliant for Hammer, but he certainly could play. *M.P.*

HOWARD JONES: *Action Replay*. Howard Jones (vocals, keyboards); vocal and instrumental accompaniment. *No One Is to Blame; Look Mama (Extended Mix); Hide and Seek (Long Ver-*

sion); Always Asking Questions; Bounce Right Back (Cause & Effect Mix); Specialty. ELEKTRA EP 60466-1 \$6.99, © 60466-4-Y \$6.99.

Performance: *Fiasco revisited*
Recording: *Excellent*

Three of the six songs on this EP are remixed or rerecorded versions of songs from "Dream into Action," one of the biggest flops of 1985. The remixes are improvements, but the songs are still unforgivably wimpy. They include a slowed-down version of *No One Is to Blame* produced by Phil Collins—it sounds like Collins, too, with its deliberate, soulful tempo. There's a nice dub reworking of *Look Mama*, with repeated choruses and remixed and reshuffled tracks, but it's still a flimsy song. Two new songs—the preachy *Always Asking Questions* and the saccharine *Specialty*—are cut from the same cloth.

Only *Hide and Seek*, from Jones's brilliant first album, can be enjoyed without embarrassment. It's a tribute to the power of the song that this extended version, with its sweeping synth introduction, really doesn't add much to the original, which seemed just as grand and majestic at some four minutes shorter. I keep waiting for Jones to come up with a worthy successor to "Human's Lib," still my favorite record of 1984. But I'm beginning to think it's not going to happen. *M.P.*

JOURNEY: *Raised on Radio*. Journey (vocals and instrumentals); other musicians. *Girl Can't Help It; Positive Touch; Suzanne; Be Good to Yourself; Once You Love Somebody; Happy to Give*; and five others. COLUMBIA OC 39936, © OCT 39936, © CK 39936, no list price.

Performance: *Velveeta-rock*
Recording: *State of the art*

At the risk of sounding like an elitist twit (or a rock critic, which is often the same thing), I have to admit that Journey is a band that inevitably rouses me to paroxysms of indifference. Still, after being favorably impressed by lead singer Steve Perry's modestly soulful turn on *We Are the World*, I decided to approach the group's new album with something like an open mind. Maybe, I thought, these guys are up to something that I have heretofore willfully ignored.

Unfortunately, after listening to the whole of "Raised on Radio" I remain convinced that Journey is the most inexplicable band in America. It's not that they're bad. In fact, if they were really lousy I'd probably be able to relate. No, as far as I can tell, it's more as if they're utterly and irredeemably lacking in personality, brains, body odor, or any other recognizably human characteristic.

The new album is business as usual. Perry continues to sound less like a rock singer and more like a tenor auditioning for a regional performance of *Rigoletto*; Neal Schon continues to dispense his

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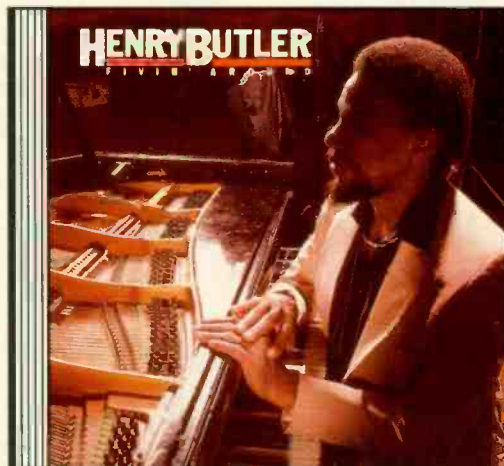
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trademark tasteful. Hendrixisms; and the group's songs are fully up to their past standard of high-tech pomposity. Even the title track, a token rocker whose lyrics are snippets from a bunch of famous songs dating back to the Fifties, fails to break through the overwhelming miasma of uninspired competence that seems to be Journey's stylistic signature. The one bright spot here is a nice mixing job by the redoubtable Bob Clearmountain. S.S.

TONIO K.: *Romeo Unchained* (see Best of the Month, page 100)

GREG KIHN: *Love and Rock and Roll*. Greg Kihn (lead vocals, guitar); Steve Wright (bass guitar, vocals); Joe Satriani (lead guitar); Tyler Eng (drums); Pat Mosca (keyboards, vocals); vocal and instrumental accompaniment. *Love and Rock and Roll: Little Red Book; Wild in Love with You; Beat of the Night; Another Girl Another Planet*; and five others. EMI AMERICA ST-17180 \$8.98, © 4XT-17180 \$8.98.

Performance: *Not his best*
Recording: *Murky*

I had to laugh at the hyperbolic press release that called this album "Kihn's boldest musical statement since 'Jeopardy.'" That's like saying, "Mike Curb's most sophisticated composition since the *Partridge Family* theme." Greg Kihn doesn't make bold musical statements, he makes bar-band rock-and-roll—thank God. You could call him the poor man's Huey Lewis except that he's been around at least a decade longer.

Unfortunately, "Love and Rock and Roll" is second-rate Kihn, although that's still better than a lot of first-rate stuff from other acts. The tunes are mostly die-cut, the band's playing is uninspired, and the recording is murky. Kihn's vocals sound as if they're coming through the smoke and chatter of a crowded bar. But there are a few good cuts: the title track, which rips off the Cars for its main theme and Buddy Holly for its bridge, is still fun; the David-Bacharach show tune *Little Red Book*, originally a hit for Manfred Mann, a song that Kihn proves again is impossible to sing in tune; and *Worst Job I Ever Had*, which isn't as funny as it should have been with that title but still rocks nicely. The rest of the album is middle of the road, and, for everyone but die-hard Kihn collectors, it probably ought to be a road not traveled. M.P.

NICOLETTE LARSON: *Rose of My Heart*. Nicolette Larson (vocals); vocal and instrumental accompaniment. *I Won't Give Up; If Only for One Night; Let Me Be the First; Captured by Love*; and six others. MCA ● MCA-5719 \$7.98, © MCAC-5719 \$7.98.

Performance: *Getting there*
Recording: *Good*

The last time I reviewed a Nicolette Larson album—rather harshly, as I re-

call—I got a call from her publicist, who practically accused me of taking etiquette lessons from the Marquis de Sade. That wouldn't stop me from panning this one, of course, except that "Rose of My Heart" is a vast improvement over Larson's last effort.

I'm not sure Larson's voice is really interesting enough or possesses enough distinctive color and texture to earn her the key spotlight. But the only real complaint I have about her is that she obviously has a severely limited emotional range, which shows up here more on the country-oriented material than on the blues-gospel or rock stuff, where she forged her initial reputation as a back-up singer. Deborah Allen and Rafe VanHoy's *If I Didn't Love You*, for example, is one of those inherently gut-wrenching songs that requires more *Angst* than Larson gives it, but she's able to reach way inside herself to pull out some soulful wailing for *As an Eagle Stirreth Her Nest*. I suspect that's part of the reason that producers Emory Gordy, Jr., and Tony Brown brought in Steve Wariner, Dave Loggins, and Linda Ronstadt to sing with Larson on three of the cuts, since they're among the most emotive singers in the business and add a much-needed depth to the overall program. A.N.

JOHN MCCUTCHEON AND SI KAHN: *Signs of the Times*. John McCutcheon (vocals, dulcimers, guitar, fiddle, banjo, synthesizer); Si Kahn (vocals, guitar); Cathy Fink (harmony vocals, banjo); other musicians. *One Thin Swimsuit; Welcome to the World/Willie's Waltz; One Strong Arm; Government on Horseback; The Senator*; and seven others. ROUNDER 4017 \$8.98, © C-4017 \$8.98.

Performance: *Absorbing*
Recording: *Varies*

John McCutcheon and Si Kahn are singer-songwriters who record both solo and with various friends. This particular album is made up partly of live concert recordings the two made on their *Signs of the Times* tour (with singer Susan Freulich), a project to bring music to the deaf. The twelve original songs are socially and politically minded, covering a range of concerns from the double tragedy of a Vietnam veteran and his family to the U.S. intervention in Central America and the good ol' boy network of the Reagan administration. On two occasions the singers successfully use humor to take a stand on pornography and abortion. But often the most affecting songs are the quiet, personal stories about friendship and family. McCutcheon is obviously the more talented of the two, both as a writer and as a singer and instrumentalist, but it's a good pairing. On the whole, "Signs of the Times" is a lovely little record. A.N.

PAKE MCENTIRE: *Too Old to Grow Up Now*. Pake McEntire (vocals); Reba McEntire, Guy Clark, Paul Davis,

Vince Gill, Wendy Waldman (background vocals); instrumental accompaniment. *Savin' My Love for You; Every Night; I'm Having Fun; Bad Love; Heart vs. Heart*; and three others. RCA AEL1-5809 \$8.98, © AEK1-5809 \$8.98.

Performance: *Nice, but...*
Recording: *Good*

When Reba McEntire and her brother, Pake (short for Pecos), were kids growing up in Oklahoma, they competed, Reba says, for everything. "I can throw a rock farther than you," Pake would say. "Well, I can sing better than you," Reba replied. She was right. On his first major-label effort (he has two LP's on his own Old Cross label), Pake McEntire shows considerable skill as a country vocalist in the traditional hardcore and western-swing styles. He moves from his lower register to his higher with uncommon grace, and he has an easy, natural feel for the material. But he does not have the talent his sister has. His light baritone lacks the richness to make him really special, and his delivery carries none of the gut-wrenching emotion that accounts for a good half of Reba's appeal. *A.N.*

RICK NELSON: *Memphis Sessions.* Rick Nelson (vocals); vocal and instrumental accompaniment. *That's All Right Mama; It's All Over Now; Dream Lover; Rave On; Send Me Somebody*; and five others. EPIC FE 40388, © FET 40388, no list price.

Performance: *Return to roots*
Recording: *Schizophrenic*

In winter of 1978-1979, the year after Elvis Presley deep-sixed in a pool of drugs and self-absorption, Rick Nelson, who was always something of a Hollywood rockabilly, walked into the famed Lyn-Lou recording studio to record what would become known as his Memphis sessions. At the time, Nelson was big on the oldies shows and dinner-theater club circuits, but he wasn't doing anything anywhere else, and he had something to prove there at Lyn-Lou.

Whether he actually proved it is debatable. At the time of Nelson's death in a plane crash last December, he was hoping to revitalize his career with the kind of soft-edged rockabilly that established him as a top recording star of the Fifties, but if this album is any indication of what Nelson was up to before his death, he probably would have been only mildly successful in his comeback. In other words, there's a reason Epic didn't release these tracks in their entirety in 1979, and if Nelson hadn't died, it's a cinch you wouldn't have heard of them now.

The high points here are the more innately sensitive, sensual songs—Bobby Darin's *Dream Lover* and Holly's *True Love Ways*—that reflect Nelson's timidity and low-key approach, a timidity that accounted for both his strength as a smouldering balladeer and his failure to become a pop star of the highest

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WILLIE NELSON: *The Promiseland*. Willie Nelson (vocals, guitar); vocal and instrumental accompaniment. *Living in the Promiseland; I'm Not Trying to Forget You; Here in My Heart; No Place But Texas; Pass It On*; and seven others. COLUMBIA FC 40327, © FCT 40327, © CK 40327, no list price.

Performance: *Barely revived*
Recording: *Digital*

Willie Nelson has been vacationing in the ozone for his last few records, or so it has sounded. With "The Promiseland" he isn't exactly bouncing off the ceiling, but he sounds as if he's enjoying what he's doing. The title cut, a patriotic ditty, pretty much takes it to the limit, but Nelson balances it with some nice ballroom ballads, a Floyd Tillman chestnut (*I've Got the Craziest Feeling*), the old *Basin Street Blues*, and even a bit of Bach (*Minuet in G*). It's not a great album by any stretch, and certainly never profound, but it's pleasant diversion, dressed nicely with Johnny Gimble's sweet western fiddling and the ever-present Mickey Raphael and his humping harmonica. Why Nelson doesn't make an effort to find stronger material, however, is beyond me. A.N.

MARNI NIXON: *Marni Nixon Sings Gershwin*. Marni Nixon (vocals); Lincoln Mayorga (piano). *I've Got a Crush on You; The Man I Love; Blah, Blah, Blah; Blue, Blue, Blue; Embraceable You; Someone to Watch Over Me*; and twelve others. REFERENCE RR-19 \$17.98.

Performance: *Uneven*
Recording: *Crystal clear*

As one of the best-known crossover artists of recent years Marni Nixon would seem an ideal interpreter for the rich Gershwin song treasury, but this is an uneven set at best. The songs she sings here often suffer from a delivery that is too strait-laced—closer to Jeanette MacDonald archness than to "the Gertrude Lawrence style" alluded to in Michael Feinstein's liner notes. Lincoln Mayorga's piano accompaniments, for all their stylishly imaginative touches (including a bit of Richard as well as Johann in *By Strauss*), don't serve Nixon's pure but thinnish sound as well as some more varied instrumental backings would have. Roy Hemming

CARL PERKINS, JERRY LEE LEWIS, ROY ORBISON, AND JOHNNY CASH: *Class of '55*. Carl Perkins, Jerry Lee Lewis, Roy Orbison, Johnny Cash (vocals); vocal and instrumental accompaniment. *Birth of Rock and Roll; Six-*

teen Candles; Class of '55; We Remember the King; Coming Home; and five others. AMERICA-SMASH/POLYGRAM ◊ 830 002-1 \$8.98, © 830 002-4 \$8.98.

Performance: *Better left untried*
Recording: *Fine*

The idea of reuniting the surviving members of the Million Dollar Quartet in the old Sun Studio and adding Roy Orbison, one of Elvis's favorite singers, to take up the slack was a great one. The execution, however, is enough to make the King grateful he couldn't sit in. Despite the predictable strengths—Orbison's otherworldly tenor, Perkins's congenial feistyness, Lewis's mild histrionics, and Cash's Voice of the Ages—this is a surprisingly bland and static homecoming. It's not that these hillbilly cats can't cut it anymore, but everybody except Perkins sounds so weary of it all, so uninspired. To top it off, the material isn't really up to snuff, and there's another tiresome Presley memorial song, *We Remember the King*, finishing up side one. Maybe the problem is that "Class of '55" was recorded in two days. Or maybe it proves you really can't go home again, no matter how sincere your intentions. A.N.

PET SHOP BOYS: *Please*. Neil Tennant (vocals); Chris Lowe (keyboards); vocal and instrumental accompani-

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ment. *Two Divided by Zero*; *West End Girls*; *Opportunities (Let's Make Lots of Money)*; *Love Comes Quickly*; *Suburbia*; and five others. EMI AMERICA PMAS-17193 \$8.98, © 4PAS-17193 \$8.98.

Performance: *Mild depressant*
Recording: *Good*

Pet Shop Boys Chris Lowe and Neil Tennant tip their hands on *Opportunities* when Tennant sings, "You've got the looks, I've got the brains, let's make lots of money." Like Wham!, the Pets are the kind of group that drives frustrated audiophiles to mutter, "I could do that." The trick here is to switch on the Linn drum, hold a few chords on the synth, and let Tennant sing-speak his melancholy lyrics. But even for formula synth-pop, this stuff is pretty limp. The third "definitive" version of *West End Girls*, a legit club classic that Tennant and Lowe recorded with Bobby O in 1982, is clearly the high point of the album. But that's where their inspiration runs out. M.P.

EDDIE RABBITT: *Rabbitt Trax*. Eddie Rabbitt (vocals); vocal and instrumental accompaniment. *Gotta Have You*; *Repetitive Regret*; *Both to Each Other (Friends & Lovers)*; *Threw It Away*; *Singing in the Subway*; and four others. RCA-AHL1-7041 \$8.98, ©

AHK1-7041 \$8.98, © PCD1-7041 no list price.

Performance: *Out of the hat*
Recording: *Very good*

In Nashville, at least, a lot of folks will argue that New Jersey-born Eddie Rabbitt has always been more of a pop stylist than a country crooner, even though he hightailed it down to Music City at a relatively young age to make his mark as a country songwriter. Early in his career, Rabbitt wrote ersatz country songs for other artists (*Kentucky Rain* for Presley, *Pure Love* for Ronnie Milsap), later singing his own pop-hooked country hits in a voice styled straight from Top 40 and the inflections of his idol, Elvis Presley. For a good while, though, Rabbitt's albums have gotten increasingly MOR, and on "Rabbitt Trax" he fairly throws in the country towel. Not only does he have new producers (Richard Landis and Phil Ramone), but he's found new writing partners and even a new label. And instead of singing with the likes of Crystal Gayle, he does a duet with Juice Newton, puts Andrew Gold behind him on guitar and background vocals, and even calls in Carly Simon for a "whistle performance" on one tune.

The upshot of all this is that Rabbitt sounds more natural here—more like a real human being instead of a poseur—

than he ever did with the more country-derived material, which is something of an irony considering that on several of the songs, he merely sets pop arrangements to country themes. Some of this is rather enjoyable, but despite some snappy rhythms and stylish production, Rabbitt's music is still pretty bland. Rabbitt may be making trax, but tracks of the larger sort are apparently still beyond him. A.N.

BOB SEGER AND THE SILVER BULLET BAND:

Like a Rock. Bob Seger and the Silver Bullet Band (vocals and instrumentals); other musicians. *American Storm*; *Like a Rock*; *Miami*; *The Ring*; *Tightrope*; *Somewhere Tonight*; *The Aftermath*; *Sometimes*; *It's You*. CAPITOL PT-12398 \$8.98, © 4PT-12398 \$8.98.

Performance: *Dullsville*
Recording: *Very good*

Bob Seger is one of those quintessential nice-guy rock journeymen you're loath to criticize on principle, but his new album, "Like a Rock," is longer on good intentions than on inspiration. A lot longer. The musical idiom is a kind of bleached-out, all-purpose American AOR that's indistinguishable from the sound tracks of lots of recent car or beer commercials. While Seger's gruff r-&-b-influenced singing retains a certain

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CHUCK BERRY'S ROCK-AND-ROLL

A FEW years back, after Chuck Berry became the first rocker whose music was launched into space (aboard NASA's Voyager I), there was a rumor that a Houston radio astronomer had received a message from a nearby star. After a team of scientists worked feverishly to decipher it, they were not too surprised to read the plea, "Send more Chuck Berry!"

"Rock 'n' Roll Rarities," a new Chuck Berry compilation, would seem a likely candidate for the next interstellar musical CARE package. The first in a projected reissue series from MCA, which acquired the entire Chess Records catalog last year, it brings together

built-in charm, his songs don't give it much of a context to operate in.

American Storm, the album's first track, is a reasonably sincere anti-drug song that, unfortunately, sounds almost exactly like *Born to Run* (a criticism that could with justice be leveled against every uptempo number Seger has come up with in the last five years). *Like a Rock* is yet another of his wallows in nostalgia for adolescence, and *Miami*, clearly intended as a Big Statement, seems to be about the first wave of anti-Castro refugees but is so vague it could as easily be about a bunch of Jewish retirees from New York's garment district.

I hate to suggest that success has spoiled Bob Seger, but the fact is that this is a thoroughly lousy record, unworthy of the fire-breathing rocker whose *Heavy Music* and *Rambling Gambler* were among the best things from Detroit since the first Corvettes and Thunderbirds. S.S.

previously unreleased alternate takes and stereo remixes of some of the most familiar tunes in rock history and allows us to hear them as if they were spanking new.

Berry, who more or less invented rock guitar, also set the standard for all subsequent rock lyric writing. "Rock 'n' Roll Rarities" catches him at his peak—from 1957, after he had made his initial score with the deathless *Maybelline*, to 1965, when he returned at the height of the British Invasion he had helped inspire. Among the high points in the set are a deliciously deadpan version of *It Wasn't Me*, his immortal paean to irresponsibility; a version of *Johnny B. Goode* with a Lafayette Leake piano break replacing the more familiar guitar solos; and absolutely revelatory remixes of *No Particular Place to Go*, *Promised Land*, and *You Never Can Tell* (still the best generation-gap song ever written).

Rock-and-roll has mutated in countless ways that would have been unthinkable back when this stuff first turned up on American radios and turntables, but Berry's music is the original gene pool from which everything since has derived. It's timeless, funny, danceable, and essential. More, please.

Steve Simels

CHUCK BERRY: *Rock 'n' Roll Rarities*. Chuck Berry (vocals, guitar); Willie Dixon (bass); Johnny Johnson, Lafayette Leake (piano); Fred Below (drums); other musicians. *No Particular Place to Go*; *Rock and Roll Music*; *It Wasn't Me*; *Reelin' & Rockin'*; *Come On*; *Johnny B. Goode*; *Bye Bye Johnny*; *Little Marie*; *Time Was*; *Promised Land*; *Little Queenie*; *You Never Can Tell*; *Sweet Little Sixteen*; *County Line*; *Run Rudolph Run*; *Nadine*; *Betty Jean*; *I Want to Be Your Driver*; *Beautiful Delilah*; *Oh Yeah*. CHES/MCA CH2-92521 two discs \$8.98, © CHC2-92521 one cassette \$8.98.

JANE SIBERRY: *The Speckless Sky*. Jane Siberry (vocals, keyboards, guitar); instrumental accompaniment. *One More Colour*; *Seven Steps to the Wall*; *The Very Large Hat*; *Vladimir, Vladimir*; *Map of the World*; and two others. OPEN AIR/A&M OA-0305 \$8.98, © OT-0305 \$8.98.

Performance: *Labored*
Recording: *Okay*

Jane Siberry's previous album, "No Borders Here," was one of the small gems of 1985. Some found a strong resemblance to fellow Canadian Joni Mitchell in her delicate soprano, vulnerable phrasing, and fondness for jazz-like settings. And her off-beat, ironic lyrics drew comparisons to Laurie Anderson. Her followup, though, is disappointing.

In "The Speckless Sky" Siberry has abandoned the direct narrative style of "Borders," a style that was often very funny and often quite sad, and has

replaced it with lyrics that are fragmented, self-referential, obscure, and largely humorless. The heightened sense of self that she conveys is at odds with her flighty vocals. Where her tremulous singing was just right for Siberry as a haggard waitress or a skeptical aerobics student or a captive of dull cocktail chatter—a few of the memorable characters from "Borders"—it sounds cloying and artificial from Siberry the poet-aster. The arrangements on the new album work at being free-wheeling and innovative, but while there's lots going on, none of it is much fun or very interesting. It's clear Siberry's trying too hard. M.P.

SOUTHERN PACIFIC: *Killbilly Hill*. Southern Pacific (vocals and instrumentals). *Road Song*; *A Girl Like Emmylou*; *Pink Cadillac*; *I Still Look for You*; *Pull Your Hat Down Tight*; *Killbilly Hill*; *Don't Let Go of My Heart*; and three others. WARNER BROS. 25409-1 \$8.98, © 25409-4 \$8.98.

Performance: *On target*
Recording: *Very good*

Southern Pacific—made up of a couple of ex-Doobie Brothers (John McFee and Keith Knudsen), a former member of Creedence Clearwater Revival (Stu Cook), and lead singer Tim Goodman, who's hung out with a bunch of the best—rolled out their debut LP last year to deservedly enthusiastic reviews. At a time when country music was, and still is, dozing on the hoof, Southern Pacific's smart, hard-muscle country-rock delivered a much-needed sockeye punch and hope for better things in the future.

On their second album, "Killbilly Hill," the band comes through again with what made the first one so impressive: sassy, California-country instrumental work, latticework vocal harmonies, and Goodman's virile but emotional lead singing. Such songs as the band's energetic, full-steam-ahead *Road Song*, their seductive cover of Bruce Springsteen's *Pink Cadillac*, and the melancholy yearning of Michael Noble and Carl Struck's *I Still Look for You* crawl up the neck and burrow in the brain.

From its inception, Southern Pacific has had a bit of a personnel problem, with two of the original members dropping out of the band before the first album was released and Cook and keyboardist-songwriter Kurt Howell coming aboard only with the second album. Perhaps this is part of the reason both albums sound more like a collection of songs than the focused output of a real band. On the other hand, when Goodman hands the lead singing duties to McFee or Howell, which might help solidify a cohesive band "feel," the result only points up how extraordinary a vocalist Goodman is.

"Killbilly Hill" has so much else going for it—including the fact that much of the best material was written by the members of the band—that any

possible stumbling blocks appear more like momentary diversions. Here's hoping that Southern Pacific has its lineup sorted out, more original songs up its sleeve, and an audience that realizes what it's got. *A.N.*

THE STYLE COUNCIL: *Home and Abroad*. Paul Weller (vocals, guitar, synth); Mick Talbot (keyboards); Steve White (drums, percussion); instrumental accompaniment. *My Ever Changing Moods; The Lodgers; Head Start for Happiness; (When You) Call Me; The Whole Point of No Return*, and five others. GEFEN GHS-24103 \$8.98, ©M5G-24103 \$8.98.

Performance: *Intense but muddled*
Recording: *Scrambled*

The Style Council's first two albums, "My Ever Changing Moods" and "Internationalists," were as auspicious a beginning as any band has had in recent memory. But the very elements that make the Style Council so appealing—their scathingly clever, anticapitalist lyrics and sophisticated pop-and-soul arrangements—are what makes "Home and Abroad" less than satisfying. Simply put, Paul Weller and Mick Talbot couldn't quite pull it off in live performances.

"Home and Abroad" is like a vintage bootleg album. The nearest mike

couldn't have been closer than the balcony. Weller has to race to get all the words in, and even when he does he sounds as though he's singing from another zip code. The horn arrangements are well intentioned and energetic, but their entrances don't always coincide with the songwriter's intentions. The drumming, too, seems to fade in and out arbitrarily. In short, "Home and Abroad" succumbs to just about every pitfall that can ruin a concert recording.

Still, when Weller and Talbot hit their stride on side two, you may almost forget you can barely hear them. Since virtually every song here is from "Moods" and "Internationalists," I encourage you to get your hands on both of those two excellent records before you try to figure out what's going on here. *M.P.*

TANGERINE DREAM: ... *In the Beginning*. Edgar Froese (guitars, organ, tapes, synthesizers); Chris Franke (drums, synthesizer); Peter Baumann (keyboards, synthesizer); other musicians. *Genesis; Cold Smoke; Sunrise in the Third System; Alpha Centauri; Green Desert; White Clouds; Journey Through a Burning Brain; Ashes to Ashes; Resurrection; Fly and Collision of Coma Sola; Birth of Liquid Plejades*; and nine others. RELATIVITY EMC 8066 six discs \$29.98 (from IRD Mail Order.

Important Record Distributors, 149-03 Guy R. Brewer Blvd., Jamaica, NY 11434).

Performance: *Absolute minimalist*
Recording: *Dated*

Tangerine Dream was one of the seminal synthesizer bands. Revisiting their early music, it's easy to see why the synthesizer met with so much resistance. "... In the Beginning" is a composite reissue of Tangerine Dream's first four, pre-Virgin albums (one of them a two-record set), plus an unreleased album from 1974. They are, for the most part, a mess. To the band's credit, the synthesizer was a much less reliable source of sound in the early Seventies than it is today, and leader Edgar Froese and Tangerine Dream eventually mastered the technology and went on to become accomplished composers for film. Still, most of this set is sheer noise—entire album sides of droning, wheezing electronic moans, punctuated with occasional drumming that, in this context, comes as an enormous relief. You can hear the influence of Terry Riley and Steve Reich, but you also understand why Riley and Reich and Tangerine Dream itself moved on to less minimalist varieties of ambient music.

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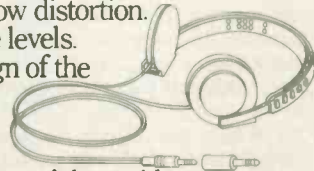
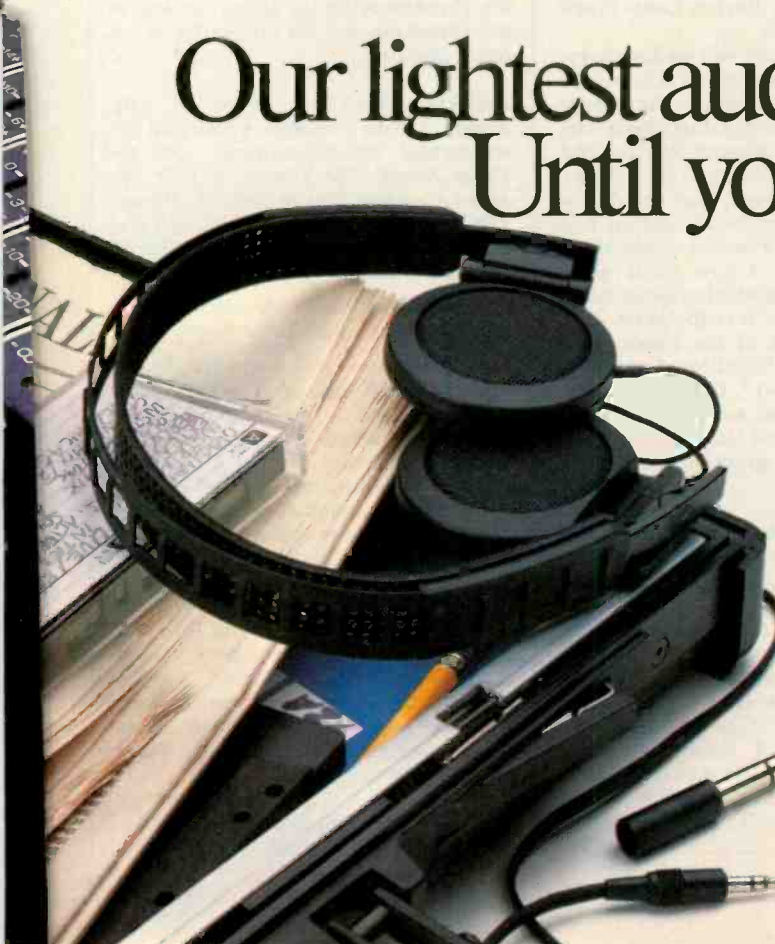
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BENNETT'S BACK

FORGET the pretentious title. "The Art of Excellence," Tony Bennett's first studio-recorded album in ten years, is easily one of his all-time best. First off, it shows that Bennett, who turned sixty in August, is still musically and expressively at the top of his form—a form that's known few equals among the real communicators of good popular songs since Bennett first hit the scene in 1950. There's an impeccable choice of material, too, and the nicely varied trio backings of longtime collaborator Ralph Sharon blended with a bigger but always tasteful London studio orchestra conducted by Jorge Calandrelli.

In an age when fewer and fewer songs seem to have much relevance to people over thirty, Bennett has come up with a dandy mix of new songs and neglected oldies that have something worth saying to grownups, particularly about the ups and downs of relationships. Two of the album's best, *Love Is All We Had* (by conductor Calandrelli and S. Miha-novic) and *Forget the Woman* (by Ronny Whyte and album co-producer Ettore Stratta), deal with romantic post-mortems in warmly intelligent and unself-pitying ways. In his more traditionally romantic vein, Bennett sings his heart out with one of Irving Berlin's least-remembered gems, *I Got Lost in Her Arms* from *Annie Get Your Gun*. He digs back even further to resuscitate *Moments Like This*, from the long-for-

gotten 1938 movie musical *College Swing*, and makes a strong case for keeping this lovely Burton Lane-Frank Loesser ballad alive.

For James Taylor's wry wailer *Everybody Has the Blues*, Bennett is joined by Ray Charles (unbilled on the album cover) in a high-spirited duet about why being down in the dumps isn't the end of the world. *City of Angels* by Tommy Wolf and Fred Astaire may not do for L.A. what one of Bennett's all-time hits has done for San Francisco, but it's a worthy reminder of how many good and regrettably neglected original songs Astaire has written over the years.

The small print of the inside liner includes this note: "Dedicated to Mabel Mercer (1900-1984)." Considering the quality of the songs and their delivery here, that estimable lady and patron saint of so many great singers would surely be pleased. *Roy Hemming*

TONY BENNETT: *The Art of Excellence*. Tony Bennett (vocals); the Ralph Sharon Trio; U.K. Orchestra Ltd., Jorge Calandrelli cond. *Why Do People Fall in Love; Moments Like This; What Are You Afraid Of?; When Love Was All We Had; So Many Stars* (CD only); *Everybody Has the Blues; How Do You Keep the Music Playing?; City of Angels; Forget the Woman; A Rainy Day* (CD only); *I Got Lost in Her Arms; The Day You Leave Me*. COLUMBIA FC 40344, © FCT 40344, © CK 40344 no list price.

of George Russell and Albert Ayler do for jazz, reminding us of a courageous and necessary musical experiment that pointed us in new directions not so much by virtue of their success as by their failure. This set is for archivists and dedicated followers only. *M.P.*

SONNY THROCKMORTON: *Southern Train*. Sonny Throckmorton (vocals); instrumental accompaniment. *Waitin' on a Southern Train; You've Got the Longest Leaving Act in Town; Bye Bye Baby Blues; My First Reaction*; and six others. WARNER BROS. 26374-1 \$8.98, © 26374-4 \$8.98.

Performance: *I.D. problem*
Recording: *Very good*

Sonny Throckmorton has a problem. As the writer of a mile-long list of hit country songs—including *The Way I Am* for Merle Haggard, *Waitin' for the Sun to Shine* for Ricky Skaggs, and *Bye Bye Baby Blues* for the Judds—Throckmorton has a sterling reputation, and presumably a bank account to match. That's a problem? No, the problem is that he's now pursuing a singing career too, and on "Southern Train" he sounds so much like Kenny Rogers, with his sandpaper vocals, that you can't shake the feeling that you're listening to Rogers, albeit a Rogers who's a lot more countrified and a lot less polished than he's sounded in years.

Other than that, this is a pretty decent little record, with a full range of contemporary and traditional material, most of it both commercially sound and artistically substantial. Whether it will be a hit for Throckmorton the singer, as well as for Throckmorton the songwriter, is another question. *A.N.*

RANDY TRAVIS: *Storms of Life*. Randy Travis (vocals); vocal and instrumental accompaniment. *On the Other Hand; The Storms of Life; My Heart Cracked (But It Did Not Break); 1982; Messin' with My Mind*; and five others. WARNER BROS. 25435-1 \$8.98, © 25435-4 \$8.98.

Performance: *On his way*
Recording: *Good*

Randy Travis recently won the Academy of Country Music's Top New Male Vocalist award on the basis of one hit single, *1982*, where he sounds more like George Jones than George Jones does. Now Warner Bros. has released Travis's debut album, a stylish one that proves that he is a serious and worthwhile suitor for the same audience that reveres Jones, Merle Haggard, and George Strait. He lays on what Charley Pride calls the "nasal nuances" a little too thick in places (*Messin' with My Mind* is dead-on Hank Williams), but his whine is as sincere as a steel guitar's. Besides, he's written a near classic honky-tonk song with *Reasons I Cheat*. I like this guy. *A.N.*

BONNIE TYLER: *Secret Dreams and Forbidden Fire*. Bonnie Tyler (vocals);

Todd Rundgren (background vocals); vocal and instrumental accompaniment. *If You Were a Woman (And I Was a Man)*; *Loving You's a Dirty Job but Somebody's Gotta Do It*; *Band of Gold*; and five others. COLUMBIA OC 40312, © OCT 40312 no list price.

Performance: *Power to spare*
Recording: *Very good*

Bonnie Tyler, the raspy-voiced Welsh singer of *Total Eclipse of the Heart* and *It's a Heartache* fame, is back with another high-octane album of melodramatic love songs. As with her last album, this one is produced by Jim Steinman, who surrounds his singer with a bigger-than-God production, probably because it takes that to support Tyler's megaton vocal power.

For all the fire Tyler is able to muster, however, the most affecting songs here are the quiet ones, like Bryan Adams's *No Way to Treat a Lady* and two songs by Desmond Child, the melancholy *Lovers Again* and *If You Were a Woman (And I Was a Man)*, a thoughtful take on the void between the sexes. Except for a useless revamping of *Band of Gold*, the old Freda Payne hit, most of the songs offer as much depth as they do emotional punch. There is the matter of some assorted caterwauling on a duet with Todd Rundgren, but maybe they just got carried away. *A.N.*

VAN HALEN: 5150. Sammy Hagar (vocals); Michael Anthony (bass); Alex Van Halen (drums); Eddie Van Halen (guitars, keyboards). *Good Enough*; *Why Can't This Be Love*; *Get Up: Dreams*; *Summer Nights*; *Best of Both Worlds*; and three others. WARNER BROS. 25394-1 \$8.98, © 25394-4 \$8.98, © 25394-2 no list price.

Performance: *Imitation*
Recording: *Good to fair*

If David Lee Roth's departure from Van Halen and his replacement with Sammy Hagar had been a baseball deal, it would be considered one of those trades that hurt both teams. Roth's solo career will probably self-destruct under the weight of his enormous ego. For Van Halen, it's meant having to replace one of rock's genuine eccentrics with a run-of-the-mill, hard-partying rock-and-roller of dubious talent.

On "5150," Hagar is clearly intent on proving he's a worthy successor to the King of Raunch-and-Roll. But where Roth could be legitimately funny about his rampaging promiscuity (*Hot for Teacher*, for instance), the best Hagar can manage is a dull, passé crudeness. *Good Enough*, which sizes up an attractive prospect as "U.S. Prime, Grade A stamped guaranteed," is a good example of how not to play the game.

With Hagar's hackneyed heavy-metal

vocals threatening to turn Van Halen into just another swaggering, dry-ice and strobe-light coliseum act, one seeks the comforts of Eddie Van Halen, guitar deity. He sounds as bored as I was. Spurred on by the incredible drumming of brother Andy, Eddie delivers an awesome frontal attack on *Get Up*. But that four minutes of solo power seems to wear him out, and the rest of "5150" is simply loud, not proud. To make matters worse, Mick Jones's contribution to the record's production only serves to muddy things up, making *Best of Both Worlds* and one or two other songs sound like Foreigner out-takes. The lone track of interest is *Inside*, a song arranged like a barroom brawl, but it's interesting mainly because Hagar seems to be suggesting that his joining Van Halen was a mistake. It was. *M.P.*

STEVE WARINER: Life's Highway. Steve Wariner (vocals, guitar); vocal and instrumental accompaniment. *Life's Highway*; *She's Crazy for Leaving*; *I Let a Keeper Get Away*; *She's Leaving Me All Over Town*; and six others. MCA MCA-5672 \$8.98, © MCA-5672 \$8.98.

Performance: *Bound for glory*
Recording: *Very good*

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RCA—even a protégé of Chet Atkins
when Atkins was still an executive with
the label. But RCA never found quite
the right production groove for Wariner.
He was pushed as a sort of young,
supperclubby Glen Campbell, and de-
spite several hit records, his "stardom"
got stalled on the tracks. Over at MCA,
producers Tony Brown and Jimmy
Bowen have given him a looser rein and
emphasized his country and country-
blues side.

Wariner sings with a lot of heart, and
his MCA albums (this is his second)
have a sense of integrity about them.
With his ultra-smooth vocal control, his
superb instrumental skills, his boyish
good looks, and his impressive song-
writing ability, he ought to hit it big
finally. Nice album. *A.N.*

WAX: *Magnetic Heaven*. Wax (vocals
and instrumentals). *Right Between the
Eyes; Hear No Evil; Shadows of Love;
Marie Claire; Ball and Chain; Magnetic
Heaven;* and four others. RCA AFL1-
9546 \$8.98. © AFK1-9546 \$8.98, ©
PCD1-9546 no list price.

Performance: *Cheerful*
Recording: *Good*

Don't be deceived: Wax isn't really a
group but a hands-across-the-sea studio
collaboration between a pair of guys
with impeccable credentials. Andrew
Gold, the American, is the hot-shot gui-
tarist responsible for nudging Linda
Ronstadt out of her mid-Seventies Cali-
fornia torpor on such hits as *You're No
Good* and *When Will I Be Loved*. Gra-
ham Gouldman, the Brit, was responsi-
ble for most of 10cc's best material (*I'm
Not in Love*) and before that penned
some of the most sublime songs of the
British Invasion (*The Hollies' Bus Stop*,
the Yardbirds' *Heart Full of Soul*).

With a background like that, you
might expect "Magnetic Heaven" to be
fairly special, but unfortunately it's not
exactly a pop classic. Everything is
cheerful, well produced, and well
crafted, but neither Gold nor Gould-
man is a particularly interesting singer,
and, more to the point, their melodic
gifts seem to have deserted them. As a
result, this is a real in-one-ear-and-out-
the-other piece of work. Only *Right
Between the Eyes*, which works up an
appealing neo-Motown groove, sticks in
your head at all. A genuine disappoint-
ment. *S.S.*

WILD CHOIR. Wild Choir (vocals and
instrumentals). *Runnin' Scared; Girl on
a String; Safe in the Arms of Love;
Walls; Never Cross That Line; I Don't
Wanta Hold Your Hand; Heart to
Heart;* and three others. RCA AEL1-
5810 \$8.98. © AEK1-5810 \$8.98.

Performance: *Assertive*
Recording: *Good studio feel*

In her eight years as a country recording
artist, singer Gail Davies has piled up
enormous critical acclaim but she has
collected only mediocre record sales.
Partly because of that, and partly be-

cause, according to Davies, there's never
been a band in the history of country
music with a female lead, she has now
abandoned her solo career and teamed
up with four Nashville musicians to
form a group with the appropriate name
of Wild Choir.

In contrast to the country/folk sound
that Davies is known for, "Wild Choir"
features an energetic, hard-driving rock
beat with only a cursory nod to country.
The focus is on a "live studio" feel, and
the other band members—Pete Pen-
dras, Denny Bixby, Larry Chaney, and
Bob Mummert—are as important to
the group's overall character as Davies
is. The level of their musicianship is
strong, and so is their material.

Some of the most impressive songs
here are Davies's own. Anyone familiar
with her other albums knows that she
has always taken a stand against "wom-
an-as-victim" in the tangle of romance,
but with the throbbing beat of Wild
Choir behind her, she has gone beyond
a simple demand for equality: she be-
comes an assertive woman who knows
what she wants and isn't shy about say-
ing it.

There's a lot going on in this album—
an amalgam and subtle integration of
styles, of talents and of vision, all of it
adding up to an achievement of real
quality. *A.N.*

**JOHN WILLIAMS: *Echoes of Lon-
don*.** John Williams (guitar); orchestra,
William Goodchild cond. *Streets of
London; Salut d'amour; Holland Park;
A Nightingale Sang in Berkeley Square;
A Foggy Day; Air on a Ground Bass; A
Room in Bloomsbury; London Pride;
London by Night; Maybe It's Because
I'm a Londoner;* and four others. CBS
FM 42119. © FMT 42119, © MK
42119, no list price.

Performance: *Neat double play*
Recording: *First-rate*

We get two sides of John Williams (the
English guitarist, not the American
movie composer and conductor) with
this album, and they are both dandy.
One side puts the spotlight on Williams
the classical soloist, performing tasteful
versions of short pieces by Handel, Pur-
cell, Byrd, and Elgar, some of them in
deftly dubbed duets with himself. On
the other side, Williams crosses over
into the pop land of Sandy Wilson,
Noël Coward, and a few others, backed
by Steve Gray's orchestral arrange-
ments of the "soft lights" variety. The
common denominator for both sides is
London, with pieces by composers
identified with Williams's sometime
home town or pieces about that city
(such as Gershwin's *A Foggy Day*). It's
an attractive program all around. I espe-
cially couldn't stop playing over and
over the dreamy *London by Night*
by Coates—presumably Eric Coates,
whose *London Suites* were so popular a
couple of decades ago but who has been
regrettably forgotten, at least on this
side of the Atlantic, in recent years.

Roy Hemming

JAZZ



ORNETTE COLEMAN, PAT METHENY: *Song X*. Ornette Coleman (alto saxophone, violin); Pat Metheny (guitar, guitar synthesizer); Charlie Haden (bass); Jack DeJohnette (drums); Denardo Coleman (percussion). *Mob Job; Video Games; Trigonometry; Song X*; and four others. GEFGEN GHS 24096 \$8.98, © MSG 24096 \$8.98, © 24096-2 no list price.

Performance: *Intense*
Recording: *Excellent*

Although Pat Metheny produced "Song X," I suspect the album will not be every Metheny fan's cup of tea. Followers of Ornette Coleman and others with adventurous ears should welcome it, however. It is mostly Coleman's album, although Metheny contributes strong support. The going gets a bit rough here and there, but on the whole this is a most satisfying release. The rhythm section is dynamic, to say the least, and the two principals exhibit a mutual rapport that simply begs for further collaboration. I did not think I would like this album. I was wrong. *C.A.*

LARRY CORYELL: *Equipoise*. Larry Coryell (guitar); Pamela Sklar (flute); Stanley Cowell (piano); Buster Williams (bass); Billy Hart (drums). *Unemployed Floyd; Tender Tears; First Things First*; and three others. MUSE MR 5319 \$8.98, © MC 5319 \$8.98.

Performance: *De-fused*
Recording: *Quite good*

Having maintained a fairly low profile for a couple of years, Larry Coryell returned to my record shelves with a Concord album last year and now with "Equipoise," a Muse record by a quartet that also features Stanley Cowell, Buster Williams, and Billy Hart. On one track, *Unemployed Floyd*, they are joined by flutist Pamela Sklar.

Coryell is an excellent jazz guitarist, a fact sometimes obscured by the frills on his fusion fare, and that excellence is very much in evidence on the present album. It's a set that warrants serious attention and is likely to remain vital for years to come. My favorite selection is Clifford Brown's *Joy Spring*, but I recommend the entire program. *C.A.*

BILL FRISELL, VERNON REID: *Smash and Scatteration*. Bill Frisell, Vernon Reid (guitars, synthesizers, banjo, drums). *Landscapes in Alternative History; Last Nights of Paris; Dark Skin; Small Hands; Black Light; Bur-*

den of Dreams; and three others. RYKODISC © RCD-10006 no list price.

Performance: *Strewn silicon*
Recording: *Excellent*

Plink and pulsation are two words one might use to describe the music of Bill Frisell and Vernon Reid; two more would be smash and scatteration, which they seem to have found for themselves. This album originally appeared last year in vinyl form on another label (Minor Music). The sound is better on the new Ryko compact disc release, but a little bit of this music goes a long way. Heavily souped up, it is high-wattage directionless sound that reveals little in the way of technical skill on the part of the two players. If you have seen artists throw paint at a canvas, you have some idea of how this album sounds. *C.A.*

STEVE KUJALA: *Fresh Flute*. Steve Kujala (flutes, recorders, piccolo, clarinet, synthesizers, vocals); other musicians. *Fretless Flute Song; Nicole; Tutti-flutti; Backburner; Peasant Dreams*; and five others. CBS BFM 42097, © BMT 42097, © MK 42097, no list price.

Performance: *Pleasant*
Recording: *Excellent*

Steve Kujala was a member of the classically trained jazz-oriented group Auricle when I first heard him, and he has since enjoyed a long association with Chick Corea. His new album may fall outside the jazz and fusion categories, but it rates a high position on the middle of the road's sunnier side.

"Fresh Flute" is highly sophisticated mood music, filled with nuances and gently nudging rhythms that please the aesthetic sense while giving the intellect a rest. If that sounds like a deprecation of Kujala's work, be assured that it is not meant to be—there is music for every mood, and this set of ten compositions written by Kujala and producer/pianist Bill Purse covers a wide range of them. *C.A.*

LYLE MAYS. Lyle Mays (piano, synthesizers, autoharp); Billy Drewes (soprano and alto saxophones); Bill Frisell (guitar); Marc Johnson (acoustic bass); Alejandro N. Acuña (drums); Nana Vasconcelos (percussion). *Mirror of the Heart; Teiko; Alaskan Suite*; and three others. GEFGEN ● GHS-24097 \$9.98, © MSG-24097 \$9.98.

Performance: *Tinkle, tinkle*
Recording: *Excellent*

If you like Pat Metheny's music, or the pitter patter that constitutes most Windham Hill fare, or that spineless form of melodic expression known as New Age music, you will probably love Lyle Mays's first album as a leader. There are brief moments when you can detect the teachings of Marian McPartland, but this is mostly elevator music that stays on the ground floor. *C.A.*

SUSANNAH MCCORKLE: *How Do You Keep the Music Playing?* Susannah



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McCorkle (vocals); Al Cohn (tenor saxophone); Ben Aronov (piano); Gene Bertoncini (guitar); other musicians. *While the City Sleeps; Where or When; Slap That Bass; Ain't Safe to Go Nowhere; Cheek to Cheek; Poor Butterfly; Blizzard of Lies; How Do You Keep the Music Playing?; A Fine Romance*; and three others. PAUSA PR-71915 \$7.98.

Performance: *Resplendent*
Recording: *Excellent*

Susannah McCorkle is better than ever in her new set, "How Do You Keep the Music Playing?" It contains several familiar songs, but every one of them has been enhanced by this remarkable song stylist. Even *There's No Business Like Show Business*, that tired number Ethel Merman used to bark, is turned into an exquisite gem in a sensitive arrangement by McCorkle and pianist Mike Abene. *While the City Sleeps*, updated with additional lyrics, is another highlight in an album that's full of them. Simply put, McCorkle is the finest interpreter of sophisticated songs we have today. C.A.

BOBBY McFERRIN: *Spontaneous Inventions*. Bobby McFerrin (vocals, bass, percussion); Herbie Hancock (piano); Wayne Shorter (soprano saxophone); Manhattan Transfer (vocals); other musicians. *Thinkin' About Your Body*;

Walkin'; From Me to You; I Hear Music; Another Night in Tunisia; Beverly Hills Blues; and five others. BLUE NOTE BT-85110 \$8.98, © 4BT-85110 \$8.98.

Performance: *Inventive*
Recording: *Excellent*

Since I found vocalist Bobby McFerrin's last album, "The Voice," pretty offensive, it pleases me to report that his new release, "Spontaneous Inventions," is thoroughly delightful. Unlike the previous set, a series of solos, this one features McFerrin with other artists, which gives it more variety. But McFerrin himself has also improved. If I heard this album's solo performances one after the other, my attention might not hold, but they are sequenced between duets with Herbie Hancock's acoustic piano (*Turtle Shoes*) and Wayne Shorter's soprano saxophone (*Walkin'*), a wonderful new look at *A Night in Tunisia* with Jon Hendricks and the Manhattan Transfer, and a funny blues satire with comic Robin Williams (*Beverly Hills Blues*).

My favorite track? Well, each one is a little gem, but I might take *Walkin'* with me to a desert island. McFerrin is often at his best when he's teamed up with an instrumentalist, and his interplay with Shorter is the highlight of a very successful and creative album. C.A.

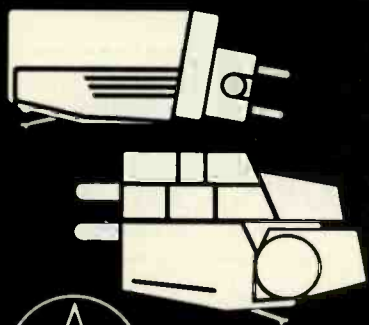
MULGREW MILLER: *Keys to the City*. Mulgrew Miller (piano); Ira Coleman (bass); Marvin "Smitty" Smith (drums). *Song for Darnell; Every Time We Say Goodbye; Saud's Run; Milestones*; and four others. LANDMARK 1507 \$8.98, © 5-1507 \$8.98, © FCD 641-1507 \$16.98.

Performance: *Tynerian*
Recording: *Excellent*

Thirty-one-year-old pianist Mulgrew Miller is yet another promising player from that seemingly eternal wellspring of jazz talent known as Art Blakey's Jazz Messengers. He has previously appeared on records with Blakey and as sideman to such fellow Blakey protégés as Terence Blanchard and Donald Harrison, but "Keys to the City" is the first release under his own name. Still largely under the spell of McCoy Tyner, Miller has yet to find his own voice, but a distinct talent is in evidence here, especially on *Warm Valley*, which he plays unaccompanied. I hope Miller soon outgrows the Tyner tinkle, but I enjoyed this taste of his budding artistry. C.A.

CHARLIE PARKER: *Birth of the Bebop*. Charlie Parker (tenor and alto saxophones); Dizzy Gillespie, Miles Davis, Billy Eckstine, Chet Baker (trumpet); Jimmy Rowles, Hazel Scott (piano); Oscar Pettiford, Red Callender, Carson

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Smith (bass); Roy Haynes, Doc West, Shelly Manne (drums). *Cool Blues*; *Sweet Georgia Brown* (two versions); *Barbados*; *Ornithology*; *Billie's Bounce*; *Drifting on a Reed*; *Embraceable You*; and five others. STASH © ST-260 \$8.98, © STC-260 \$8.98.

Performance: *Significant*
Recording: *Decent to dreadful*

Since the late Thirties, when record companies began to dig into their archives for alternate takes, the jazz world has periodically unearthed rare, forgotten, but remarkable performances. Many of those performances have been by Charlie Parker. "Birth of the Bebop" is a Parker collection that derives largely from the so-called Redcross discs, well-worn acetates from 1943 and 1946, which have been combined with other private recordings of 1950 and 1953. The early performances are of musical as well as historical importance despite the considerable surface noise.

Robert Redcross, recently a chauffeur for Billy Eckstine and Dizzy Gillespie, began cutting acetate discs in 1938, often in his room in Chicago's Savoy Hotel. That's where a nearly eight-minute version of *Sweet Georgia Brown* was played on a chilly February night in 1943 by Parker (on tenor), Dizzy Gillespie, and bassist Oscar Pettiford. The recording was the first made by Parker

and Gillespie together, which alone gives it great historical significance, and it forms as good a bridge from swing to bop as we are ever likely to hear. Gillespie had at this point moved farther away from the Roy Eldridge influence than Parker had from that of such tenor players as Coleman Hawkins and Chu Berry. Two other 1943 sides recorded by Redcross feature Parker with Billy Eckstine on trumpet, and one has him accompanying Hazel Scott's 1942 Decca recording of *Embraceable You*—all on the tenor saxophone. You wonder what the hotel's other guests thought.

Parker, on alto, and Gillespie are again heard together on a couple of 1946 sides Redcross made in a private home in Hollywood. The three intervening years had taken both men over to bop, with exhilarating results, particularly in the album's second version of *Sweet Georgia Brown*, which also features input from Don Byas.

Redcross is not responsible for the album's second side, the cuts on which stem from 1950 and 1953 and are slightly to considerably better in sound quality. They're not bad as filler, but there is a wealth of better, professionally recorded material from this period. *C.A.*

GEORGE WALLINGTON: *The Symphony of a Jazz Piano*. George Wallington (piano). *Jack Finding His Jill*; *Post-*

humous Glory; *Billie, I Must Leave You Now*; *Two Lovers*; *Soap Bubbles*; *Delusion*; and six others. INTERFACE/DENON © 33C38-7825 no list price.

Performance: *Eloquent*
Recording: *Excellent*

George Wallington came to New York from Sicily when he was a year old. His name then was Giacinto Figlia, but an inclination to dress elegantly earned him the nickname "Lord Wallington." Judging by the photographs on his new CD, "The Symphony of a Jazz Piano," Wallington continues to dress elegantly, and his playing is no less stylish.

About three decades ago, Wallington, the composer of such successful bop fare as *Godchild* and *Lemon Drop*, walked off the jazz scene, disheartened by the commercial direction the music was taking. There is, of course, a certain irony in his choosing to return at a time when some of our finest players and young jazz hopefuls have shamelessly thrown themselves at commercialism's feet. Then again, that may be why he came back.

I highly recommend these fifty-four minutes of original compositions, expertly played by a man of rare integrity and sensitivity. If Wallington's name is new to you, listen to this set, then look for his Prestige and Blue Note recordings. You are in for a treat. *C.A.*

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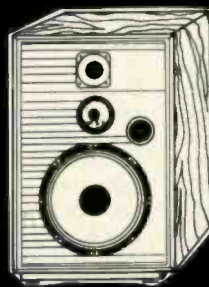
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*Discs and tapes
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Stoddard Lincoln*

BACH: Suites for Unaccompanied Cello (BWV 1007-1012). Mischa Maisky (cello). DEUTSCHE GRAMMOPHON ① 415 416-1 three discs \$29.94, © 415 416-4 two cassettes \$29.94, © 415 416-2 three CD's no list price.

Performance: *Searching*
Recording: *Fine*

Besides beauty of tone and perfection of technique, Mischa Maisky brings a warm, searching quality to Bach's six cello suites as he probes the subtleties of the music. His approach is fine for the free-style preludes and the allemandes, but in the jauntier gavottes, gigues, and courantes, the constant feeling-out destroys the dance quality. The first requirement of dance music is that it dance, and these suites, however complex, are dance music. S.L.

BEETHOVEN: Piano Concerto No. 4, in G Major, Op. 58; Symphony No. 5, in C Minor, Op. 67. Carol Rosenberger (piano); London Symphony Orchestra, Gerard Schwarz cond. DELOS © DCD 3027 no list price.

Performance: *Good to excellent*
Recording: *Comfortable*

In many respects, the major attraction of this CD is that the coupling offers a full seventy minutes of well-played Beethoven. Carol Rosenberger's best solo work is in the concerto's finale, which comes off in flawless rippling style. The Imperial Bösendorfer she plays has a lovely sound here. Gerard Schwarz and the London Symphony give her solid backing, and the ambience of the Henry Wood Hall, where the recording was made, is both intimate and comfortable to the ear. There's no attempt to tickle the eardrums here—just good, honest sound.

Schwarz puts the orchestra through a virile, no-nonsense reading of the Fifth Symphony, observing the exposition repeat in the finale. If his interpretation does not exactly efface memories of the celebrated and near-fearsome Carlos Kleiber performance with the Vienna

Philharmonic on Deutsche Grammophon, it is an interpretation that stands firmly and honestly on its own. D.H.

BEETHOVEN: Symphony No. 1, in C Major, Op. 21 (see MOZART)

BEETHOVEN: Symphony No. 1, in C Major, Op. 21; Symphony No. 2, in D Major, Op. 36. English Chamber Orchestra, Michael Tilson Thomas cond. CBS ① IM 39707, © IMT 39707, no list price.

Performance: *Elegant*
Recording: *Excellent*

Michael Tilson Thomas, continuing his cycle of the Beethoven symphonies with the English Chamber Orchestra, again reveals his affinity for this composer. The sound of the orchestra is transparent, and Thomas leads these charming symphonies with an elegance that clearly honors Beethoven's eighteenth-century roots. Splendid work! S.L.

BEETHOVEN: Symphony No. 3, in E-flat Major, Op. 55 ("Eroica"); Egmont Overture, Op. 84. Berlin Philharmonic Orchestra, Herbert von Karajan cond. DEUTSCHE GRAMMOPHON ① 415 506-1 \$10.98, © 415 506-4 \$10.98, © 415 506-2 no list price.

Performance: *A testament*
Recording: *Good*

With this *Eroica* and the Eighth, scheduled for release at about the same time, Karajan completes his digital survey of the Beethoven symphonies, all issued on Compact Disc. It is his fourth complete Beethoven cycle, and surely the one he intends to stand as a sort of testament to a lifetime's thought and study.

The *Eroica*, of course, is pivotal to such an undertaking, and this one in most respects constitutes a true culmination. The performance is perhaps closer to the fine one in Karajan's last Beethoven set (1977) than any of his other digital remakes is to its respective predecessor. It is a bit cooler, but nonetheless as rich in drama as in musical detail, impeccably balanced, powerful, unostentatiously majestic. Everything you'd want in an *Eroica* is surely present in this one.

Like the rest of Karajan's new Beethoven cycle and several of his other recent recordings, this one was taped by the Deutsche Grammophon team for a Telemondial video production. Why that should make a difference, I can't imagine, but here, as in some of the other recordings from that series, the sound strikes me as rather less full-bodied than we might expect in 1986, and it has less definition here and there as well.

In respect to sonic excellence, this and all other current recordings of the *Eroica* must yield to Dohnányi's fleet-footed

one for Telarc and Suitner's for Denon with its first-movement repeat. But *musically* Karajan is more than a match for them, and by any other standards DG's sonics are quite good indeed. There is also a most agreeable bonus in the form of a stirring *Egmont* Overture (beautifully paced for a total of eight minutes, not ten as printed), which could tilt anyone's decision further in favor of the Karajan album. R.F.

BEETHOVEN: Symphony No. 9, in D Minor, Op. 125 ("Choral"). Carol Vaness (soprano); Janice Taylor (mezzo-soprano); Siegfried Jerusalem (tenor); Robert Lloyd (bass); Cleveland Orchestra Chorus; Cleveland Orchestra, Christoph von Dohnányi cond. TELARC © CD-80120 no list price.

Performance: *Swift and sure*
Recording: *Very good*

BEETHOVEN: Symphony No. 9, in D Minor, Op. 125 ("Choral"). Helen Donath (soprano); Trudeliene Schmidt (mezzo-soprano); Klaus König (tenor); Simon Estes (bass); Bavarian Radio Symphony Chorus and Orchestra, Sir Colin Davis cond. PHILIPS 416 353-1 \$10.98, © 416 353-4 \$10.98, © 416 353-2 no list price.

Performance: *Monumental*
Recording: *Very good*

These latest recordings of Beethoven's Ninth Symphony are as remarkable for their internal consistency of style and tempo as for their sharply contrasting views of the music. Where Christoph von Dohnányi is lean and urgent in his treatment of the turbulent opening movement, Sir Colin Davis is sternly monumental. Where the Clevelanders' scherzo is mercurial, the Bavarians take a more measured approach. In the noble slow movement, it is Dohnányi and the marvelous Cleveland strings and winds that search out the mystical element, while Davis views it as a serene song whose line is broken only by the fanfare episodes toward the close and by the great plunge into D-flat, later echoed in the "*Vor Gott*" outburst of the chorus in the finale.

Interpretive contrasts are less evident in the finale. Both choruses are excellent, but Davis's soloists have an edge, not only in the remarkable sureness with which they execute the trying variations-and-coda episode but particularly in the impressive way that Simon Estes projects the famous bass solo. He may not have the dark, magisterial quality of, say, Matti Salminen in Zubin Mehta's RCA recording, but the power and conviction of his vocalism is arresting. In the choral department, however, the Clevelanders show more rhythmic alertness and sharpness of attack.

Both recordings have excellent sound, with good balance between the vocal

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and orchestral elements. Munich's Herkulesaal projects a more powerful bass, while Cleveland's Masonic Auditorium yields slightly more brightness at the high end. *D.H.*

BLOCH: Piano Quintet No. 2. LERDAHL: String Quartet No. 2. Howard Karp (piano, in Bloch); Pro Arte Quartet. LAUREL LR-128 \$9.98.

Performance: *Convincing*
Recording: *In character*

For the present generation, nearly all of Ernest Bloch's music represents material awaiting discovery. With precious few exceptions, it simply isn't heard, and even in recorded form it is far less well represented than it ought to be. The Second Piano Quintet was composed in 1957, about two years before Bloch's death. Even among those familiar with its splendid predecessor, few were aware of this work's existence, but anyone with functioning ears should be happy to make its acquaintance in this very attractive premiere recording.

Howard Karp, the pianist in the Bloch, is the father of Parry Karp, the Pro Arte Quartet's violist. All five musicians are on the faculty of the University of Wisconsin at Madison. The Pro Arte commissioned Fred Lerdahl's Second Quartet, introduced the original version at Madison in 1981, presented the final, somewhat expanded version in New York in November 1983, and here gives it its disc premiere. In the liner notes, Lerdahl describes the work as a single movement made up of two parts, which in turn break down into more or less identical five-part structures. It is, he writes, "outwardly passionate, developmental, full of energy and sweep." The quartet is in a clearly contemporary yet readily accessible idiom—as accessible, as some fleeting resemblances suggest, as Stravinsky's *Firebird* or Schoenberg's *Transfigured Night*. It's a substantial work, one that invites the listener back, and the performance, like that of the Bloch, is thoroughly convincing. The recorded sound is representative of the fine chamber-music quality we've come to expect on Laurel, and the pressing is clean enough to make you think you're listening to a CD. *R.F.*

BRITTEN: Sinfonia da Requiem, Op. 20; An American Overture, Op. 27; Occasional Overture, Op. 38; Suite on English Folk Tunes, Op. 90 (see *Best of the Month*, page 101)

CHOPIN: Waltzes. Dmitri Alexeev (piano). ANGEL ● AE-34488 \$6.98, © 4AE-34488 \$6.98.

Performance: *Probing and poetic*
Recording: *Very good*

CHOPIN: Waltzes. Zoltán Kocsis (piano). PHILIPS ● 412 890-1 \$10.98, ©

POGORELICH'S TCHAIKOVSKY

IN the notes for his new recording of Tchaikovsky's First Piano Concerto, Ivo Pogorelich declares that his purpose is to show that Tchaikovsky wrote "a genuine dialogue between piano and orchestra. What it needs is partnership, not ostentatious cascades of sound with humble orchestral accompaniment. . . . Above all the pianist must not seek merely to dazzle, but must allow complete equality to the orchestra."

A nice sentiment, and it is in large part supported in this performance, which is exceptionally musical, at times downright poetic. It is in no way matter-of-fact, and yet there is no feeling of any sort of straining for effect. Though I would personally like the first movement to move on a bit more—it is spun out to over twenty-three minutes here—Pogorelich's caressing of some phrases doesn't really impede momentum. There is not only a sense of parity between soloist and orchestra but a good deal of real give-and-take. While Deutsche Grammophon has actually focused the piano about as far forward as we hear it in most recordings of this work, care has been taken to allow the orchestral voices to make their effect.

It's worth noting that even with the long first movement, the total timing of this performance is under thirty-eight minutes, not very generous for a compact disc capable of yielding twice that in playing time. But it is, in all, a fresh

412 890-4 \$10.98, © 412 890-2 no list price.

Performance: *Bright and fresh*
Recording: *Very good*

Both of these recordings are enormously attractive, and in such strongly contrasting ways that you may feel you want both of them. Dmitri Alexeev is probing and poetic, rather introspective in his evocation of a distinctly nocturnal frame, while Zoltán Kocsis seems more driven by spontaneity. The brightness, vivacity, and overall sense of freshness in his playing suggests an unresisting surrender to the more extroverted character of actual dance music. There is a heady intoxication in either approach, and either disc could be a desert-island choice, for Kocsis is by no means without poetry or depth, nor is Alexeev wanting in liveliness. Both pianists give us all nineteen of the waltzes, and both benefit from first-rate recording. *R.F.*

DEBUSSY: String Quartet in G Minor. RAVEL: String Quartet in F Major.



and satisfying account of the thrice-familiar work—enhanced by sound that is satisfyingly rich and full.

Richard Freed

TCHAIKOVSKY: Piano Concerto No. 1, in B-flat Minor, Op. 23. Ivo Pogorelich (piano); London Symphony Orchestra, Claudio Abbado cond. DEUTSCHE GRAMMOPHON ● 415 122-1 \$10.98, © 415 122-4 \$10.98, © 415 122-2 no list price.

Nuovo Quartetto. DENON © 33C37-7830 no list price.

Performance: *Overly expansive*
Recording: *Wonderfully lush*

One of the jewels of Italy's cultural life in the years since World War II has been the Quartetto Italiano, whose eminence is attested by its long and varied roster of recordings covering the major masterpieces of the string-quartet literature. Piero Farulli, who played viola for more than three decades with the Quartetto Italiano, has now joined three younger colleagues to form the Nuovo Quartetto, represented on this Denon CD in its U.S. debut release.

In choosing the oft-recorded pairing of the Debussy and Ravel masterworks, the group puts itself in competition with some of the best quartets in the business. Unfortunately, it falls a bit short. What is missing for me in these performances is the element of volatility and lightness so essential to this music, which is reflected in the rather extended performance times.

In both works, the scherzo move-

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Andrew Davis: coolly detailed Holst

ments, with their abundance of pizzicato effects, fare best. Thanks to a lovely room acoustic, the sonics are ravishing, with a lushness to the strings that would be hard to surpass. *D.H.*

DEBUSSY: *String Quartet in G Minor, Op. 10.* RAVEL: *String Quartet in F Major.* Alban Berg Quartet. ANGEL ● DS-38193 \$11.98, © 4DS-38193 \$11.98, © CDC-47347 no list price.

Performance: *Ravel better*
Recording: *Razor sharp*

DEBUSSY: *String Quartet in G Minor, Op. 10.* RAVEL: *String Quartet in F Major.* Cleveland Quartet. TELARC ● DG-10111 \$12.98, © CD-80111 no list price.

Performance: *A little tentative*
Recording: *Gorgeous*

The most all-round satisfying LP of these frequently (and sensibly) paired quartets, I think, was the one by the Melos Quartet on Deutsche Grammophon, which is no longer in the catalog. The Vienna-based Alban Berg Quartet takes a similar approach but without quite such effective results, particularly in the Debussy, which, instead of seeming eloquently understated, here seems merely distant, suggesting the players had not yet fully digested the material. The Ravel comes off better, with a fine natural flow and a good deal of depth. The recording is razor sharp but somewhat lacking in intimacy.

Telarc gives the Cleveland Quartet the advantage of gorgeous sound, exceptionally rich and well balanced, but if the Alban Berg Quartet sounds distant in the Debussy the Cleveland Quartet sounds a little tentative in a different sense. They tend to thin out at climactic points (such as the big surge one expects in the slow movement of the Debussy), and their pizzicati are dryish in the two scherzos.

The Quartetto Nuovo, on Denon,

shows altogether more commitment and a greater sense of color than either the Berg or the Cleveland but occasionally blurs the lines and impedes momentum with a somewhat overindulged voluptuousness. I have not heard the CD transfer of the Galimir Quartet's Debussy/Ravel, for Vanguard, but those performances, issued on LP a few years ago, are clearly more satisfying than any others on CD now. *R.F.*

HANDEL: *L'Allegro, il Penseroso, ed il Moderato.* Nancy Armstrong, Sharon Baker (soprano); Mary Westbrook-Geha (mezzo-soprano); Frank Kelley (tenor); James Maddalena (baritone); Chorus and Orchestra of Banchetto Musicale, Martin Pearlman cond. ARABESQUE ● ABQ 6554-2 two discs \$16.98, © ABQC 6554-2 two cassettes \$16.98, © Z6554-2 two CD's no list price.

Performance: *Excellent*
Recording: *Excellent*

Judging from Schwann, you get the distinct impression that France, Germany, and England have a corner on the market for authentic performances of large Baroque vocal works. It is a pleasure, then, to be able to recommend this wonderful new recording of Handel's *L'Allegro, il Penseroso, ed il Moderato* by the soloists, chorus, and orchestra of the Boston-based Banchetto Musicale. Judging from *it*, all is well in American early-music making.

Perhaps the most striking aspect of this performance is that *all* of the singers—not just the women, as is so often the case—employ what is at the moment considered to be Baroque-style vocal production: the sound is pure and sharply focused, comparatively free of vibrato. The women's voices seem disembodied, like those of boy sopranos, and the men's voices seem to lack virility. Except for differences in range, all the voices tend to sound alike, and the singing seems impersonal, lacking in individual character. Although this approach takes some getting used to, and it can become tiring, once accepted its rewards are great in terms of the increased clarity of line and articulation and the seamless blend of the voices with the early instruments. The validity of the technique is certainly proven in Nancy Armstrong's ravishing "Sweet bird" and Sharon Baker's brilliant "Orpheus' self may have his head." And Frank Kelley's steely laugh in "Haste thee, nymph" could not be duplicated by any other means. But while the singing is generally of a very high standard, the diction in the airs leaves something to be desired, and none of the singers has really mastered the trill that is so important in Baroque music.

The orchestra is splendid, and we are given a chance to hear it solo by the felicitous insertion of a Handel concerto grosso that serves as an overture. Not only is the full ensemble excellent, but the obbligato playing displays the talents of many fine individual players.

Conductor Martin Pearlman's choice of tempos and pacing is effective. Especially commendable is his treatment of the recitatives. Rightly questioning the current fad of playing the cadences simultaneously with the final vocal note despite the resultant harmonic clashes, he has reinstated the tradition of delaying the final chords. It's high time somebody had the courage to say no to unfounded and unmusical practices that creep into so many performances of early music. *S.L.*

HOLST: *The Planets, Op. 32.* Toronto Children's Chorus; Toronto Symphony, Andrew Davis cond. ANGEL ● DS-37362 \$11.98, © 4DS-37362 \$11.98, © CDC-47417 no list price.

Performance: *Carefully tempered*
Recording: *Cool and clean*

Collectors with long memories may recall that during World War II, the Toronto Symphony under Sir Ernest MacMillan recorded the first four movements of *The Planets*, which RCA subsequently issued on 78's as well as on its budget Camden LP label. Audio technology and the recording history of *The Planets* have come a long way since then, when Holst's own Columbia album was the only existing complete version. Now, with Andrew Davis's new Angel recording, there are more than a dozen recorded versions, many with super-star conductors and orchestras, and six of them are on CD.

Davis's approach to *The Planets* is coolly detailed, an approach that works best in the serenely placid *Venus* movement, in the brilliant nervousity of *Mercury*, where he achieves a fine chamber-music transparency, and in the coldly ethereal *Neptune* finale with its offstage choir—in this case, a vibrato-free children's ensemble. Only the opening movement, *Mars*, is a serious disappointment, requiring a greater measure of urgency and tension. The recording is clean and bright but generally neutral in coloration, which tends to emphasize the coolness and measured quality of Davis's reading. (The Gibson recording on CD has a warmer acoustic surround.) Sound buffs, though, will enjoy the fine timpani transients and the organ glissando in the *Uranus* movement as conducted by Davis. *D.H.*

LERDAHL: *String Quartet No. 2* (see BLOCH)

LISZT: *Grandes études de Paganini; Au lac de Wallenstadt; Il penseroso; Les Jeux d'eau à la Villa d'Este; Hungarian Rhapsody No. 13.* André Watts (piano). ANGEL ● DS-37354 \$11.98, © 4DS-37354 \$11.98, © CDC-47380 no list price.

LISZT: *Piano Sonata in B Minor; Un sospiro; Valse oubliée No. 1; Nuages gris; Schlaflos, Frage und Antwort; En rêve; Transcendental Etude No. 10; Bagatelle ohne Tonart.* André Watts (piano). ANGEL ● DS-37355 \$11.98, ©

4DS-37355 \$11.98, © CDC-47381 no list price.

Performances: *Excellent*
Recordings: *First-rate*

According to Angel, André Watts had more or less withdrawn from recording activity for about ten years until the sessions that produced these discs last November. Watts actually began his discography with Liszt (he recorded the E-flat Concerto with Bernstein just after his debut at the age of sixteen), and now he has resumed with Liszt because he had prepared this material for his recital programs in the Liszt centennial season. It's an auspicious return, and the second of these two collections is especially impressive.

In the piano sonata Watts plays with an apparent freedom that will evoke for many listeners the image of the old Romantic virtuoso, and yet with a very clear regard for, and grasp of, the remarkable work's structure. His performance may not supersede those by Brendel, Browning, Arrau, Bolet, or Cécile Ousset, but it is in the same league. The forward-looking pieces from the 1880's packaged with it are especially welcome in Watts's probing, clear-eyed presentation.

The *Paganini Études*, as an integral unit, had been largely neglected on records until Angel's release of Ousset's fine recording of them together with the B Minor Sonata. Both pianists are superb in the études. Watts's companion material—three pieces from the *Années de pèlerinage* and a Hungarian rhapsody—will be just as likely to be duplicated in most collections as the sonata, but the prospective buyer is really in a no-lose situation here, for any choice between these alternatives is going to be a satisfying one. The Watts recording of the sonata and the late pieces, though, strikes me as being virtually indispensable.

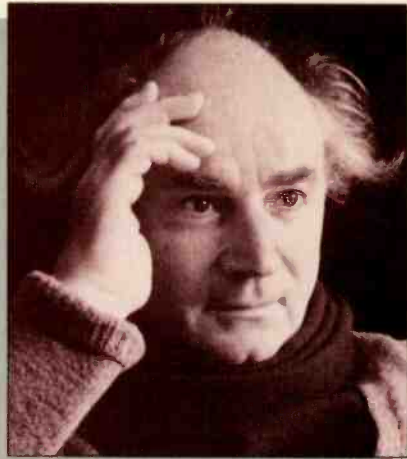
R.F.

MENDELSSOHN: *Organ Preludes and Fugues in C Minor, G Major, and D Minor; Andante with Variations in D Major; Organ Sonatas Nos. 1, 3, and 6.* Marie-Claire Alain (organ). ERATO/RCA © ECD 88112 no list price.

Performance: *Powerful*
Recording: *Very good*

More than seventy-five years passed after Bach's death before another German composer made any significant contribution to that country's great tradition of organ music. Considering how deeply the young Mendelssohn was influenced by Bach, it is not surprising that it was he who picked up the tradition. Ironically, however, he might not have stuck to it if he hadn't visited England, where organ voluntaries were an integral part of the Anglican liturgy.

Marie-Claire Alain here gives us some of the happy results of Mendelssohn's devotion to Bach and to the organ. Her strong performances bring out the involved counterpoint of the fugal writing and set off the traditional German cho-



Rafael Kubelik: *romantic Mozart*

rale melodies that Mendelssohn used. She is unafraid even to reveal the sentimentality of the lyrical, songs-without-words sections. Let's hope she will record the three remaining sonatas and some of Mendelssohn's other short organ works.

S.L.

MOSZKOWSKI: *Suite in G Minor for Two Violins and Piano, Op. 71* (see MOZART)

MOZART: *Divertimento in D Major (K. 251); Divertimento in B-flat Major (K. 270); Serenata notturna in D Major (K. 239).* Orpheus Chamber Orchestra. DEUTSCHE GRAMMOPHON ● 415 669-1 \$10.98, © 415 669-4 \$10.98, © 415 669-2 no list price.

Performance: *Robust*
Recording: *Excellent*

The true meaning of "divertimento" is a piece to divert or amuse, not necessarily to edify, and the Orpheus Chamber Orchestra is most diverting in its robust readings of these delightful Mozart pieces. The Divertimento in B-flat Major, for pairs of oboes, horns, and bassoons, reveals the splendors of the ensemble's wind players, and the *Serenata notturna* does the same for its sensitive string section. The Divertimento in D Major unites the group's several strengths in a glorious whole.

S.L.

MOZART: *Don Giovanni.* Alan Titus (baritone), Don Giovanni; Julia Varady (soprano), Donna Anna; Thomas Moser (tenor), Don Ottavio; Jan-Hendrick Rootering (bass), Commendatore; Arleen Augér (soprano), Donna Elvira; Rolando Panerai (baritone), Leporello; Rainer Scholze (bass), Masetto; Edith Mathis (soprano), Zerlina. Chorus and Orchestra of the Bavarian Radio, Rafael Kubelik cond. EURODISC/RCA ● 302 435-44 three discs \$32.98, © 502 435-44 three cassettes \$32.98, © 610-00287 three CD's no list price.

Performance: *Musicianly*
Recording: *Well engineered*

Do not be put off by the silly album cover of this set, or by its rather inade-

quate program notes. Granted, the recording does have shortcomings, especially in Alan Titus, who is not yet a polished Giovanni. He sings the part accurately enough, but without the magnetism of Pinza, the elegance of Siepi, or the presence of London. Without a dominating singer in the title role, the performance loses theatrical focus and tension. Less important, perhaps, but not infrequently unsettling, is the wayward Italian pronunciation on the part of cast generally.

Very much on the credit side, however, is Rafael Kubelik's fairly romantic reading of the score, much like Wilhelm Furtwängler's from the 1953 Salzburg Festival. Kubelik has lived long and lovingly with Mozart's operatic masterpiece and brings to it a warm, sensitive, and well-proportioned reading, drawing some fine singing from the principals. Aside from Titus, Thomas Moser makes Ottavio somewhat less the stick he usually is; his two arias are well performed. Rolando Panerai and Rainer Scholze are commendable in their assignments, and Jan-Hendrick Rootering deserves special praise for his imposing, clear-voiced Commendatore. The three sopranos, however, contribute the most interesting performances. Julia Varady sings the Act II "Non mi dir" with unusual beauty and ease; Arleen Augér makes the semi-crazed Elvira a pitiable figure; and Edith Mathis's Zerlina is warm-voiced, smoothly sung, and charmingly characterized.

If this is not the definitive *Don Giovanni* recording, it nonetheless, under Kubelik's direction, offers many musical rewards.

R.A.

MOZART: *Symphony No. 36, in C Major (K. 425, "Linz"); Symphony No. 38, in D Major (K. 504, "Prague").* English Chamber Orchestra, Jeffrey Tate cond. ANGEL ● AE-34468 \$6.98, © 4AE-34468 \$6.98.

Performance: *Noble*
Recording: *Splendid*

Continuing their Mozart series, Jeffrey Tate and the English Chamber Orchestra present the *Linz* and *Prague* Symphonies in radiant readings. Although Tate has been mostly occupied with opera until now, he is certainly at home with the symphonic repertoire, and especially with the music of Mozart. Noble music, noble performances, splendid sound, fine listening.

S.L.

MOZART: *Symphony No. 40, in G Minor (K. 550); Symphony No. 41, in C Major (K. 551, "Jupiter").* Chamber Orchestra of Europe, Sir Georg Solti cond. LONDON ● 414 334-1 \$10.98, © 414 334-4 \$10.98, © 414 334-2 no list price.

Performance: *Fine "Jupiter"*
Recording: *Very good*

MOZART: *Symphony No. 40, in G Minor (K. 550).* **BEETHOVEN:** *Symphony No. 1, in C Major, Op. 21.* Orchestra of the 18th Century, Frans

SCHUBERT'S "WINTERREISE"



Peter Schreier and Sviatoslav Richter: complete rapport

NEW recordings of Schubert's *Winterreise* song cycle have come at us in the last two or three years with a frequency formerly reserved for such instrumental favorites as the Tchaikovsky symphonies and Vivaldi's *Four Seasons*. Several of them have been fairly distinguished, and nearly every one has fit snugly on a single Compact Disc. The newest one, however, recorded in actual performance at the Semper Oper in Dresden in February 1985 by Peter Schreier and Sviatoslav Richter, requires a second disc because it runs about seventy-eight minutes. It is a staggering performance, and by way of giving very full value the set also includes Richter's similarly staggering performance of Schubert's "Unfinished" Sonata in C Major, D. 840 (the so-called *Reliquie* Sonata), recorded live in 1979.

If I begin with the sonata, it may help describe the performance of the song cycle as well. Richter's is quite unlike any other recorded performance of this music in terms of depth, dimension, and sheer intensity. The first movement alone, at twenty-two and a half minutes, is longer than Alfred Brendel's performance of the entire work; Richter's total timing is forty-five minutes. He adopts very deliberate tempos and holds to them, he repeats the entire first-movement exposition, and—unlike Brendel and virtually every other pianist, who play only the two movements Schubert completed—he plays the menuetto and finale as well. You're not likely to feel there is anything incomplete about the menuetto unless you're following with a score, but in the finale—well, Richter simply stops playing where Schubert stopped writing. It is all very inward and very uncluttered by any sort of interpretive overlay.

How frequently Richter has collaborated with Schreier, or, indeed, whether they had ever performed together before undertaking the *Winterreise* recorded here, I do not know, and the

notes do not say, but they were obviously of one mind when they performed the cycle in Dresden. They approached it not as a series of songs but as a single continuous musical and emotional sequence, building upon and enhancing each other's phrases as only a singer and pianist in complete rapport can do. Several of the songs are taken more slowly than usual, but none of them seems at all overdeliberate because each is subtly invested with the dramatic and emotional *weight* that both calls for and sustains such pacing. Not a single syllable is thrown away. Schreier has obviously absorbed the text with the most creative understanding, and he informs every phrase with the utmost poignancy—while maintaining the most natural musico-dramatic momentum and always "breathing together" with Richter. Together they give us something quite different from all other versions.

Schreier's voice, I should add, is in beautiful shape, and the digital recording of the song cycle is vivid and well balanced. The older, analog recording of the sonata is also first-rate. In both the song cycle and the sonata, Philips wisely cut off any applause that could break the spell for the home listener. There is some audience noise, and in the *Winterreise* a good deal of coughing, but this nuisance becomes an assurance of the unbroken continuity of an actual live performance, and as such it is easily borne. Perhaps the very intensity of these performances will make some listeners regard them as more suited for alternate listening than as the only versions to have of the works, but they are certainly too moving to think of doing without them.

Richard Freed

SCHUBERT: *Winterreise* (D. 911); *Piano Sonata in C Major* (D. 840, "Unfinished"), Peter Schreier (tenor); Sviatoslav Richter (piano). PHILIPS 416 289-1 two discs \$19.96, © 416 289-4 two cassettes \$19.96, © 416 289-2 two CD's no list price.

Brüggen cond. PHILIPS 416 329-1 \$10.98, © 416 329-4 \$10.98, © 416 329-2 no list price.

Performance: *Revelatory*
Recording: *Very good*

The Chamber Orchestra of Europe was organized some three years ago as an offshoot of the European Community Youth Orchestra. Alexander Schneider has conducted the group in recordings of Dvořák and Mozart, and such star conductors as Lorin Maazel and Sir Georg Solti have been actively interested in it. This Solti Mozart album is the first of his COE recordings to be released in the U.S., and the *Jupiter* Symphony performance is a notable achievement.

Unlike some of Solti's work with his own Chicago Symphony, his *Jupiter* reading, while taut, is unforced, and the young musicians respond with hair-trigger alertness to his direction. There is a superbly virile opening movement, a beautifully inflected andante, an easily paced yet aristocratic minuet with unusually lovely woodwind playing in the trio section, and a finale of great brio. The recorded sound, too, is clean and bright.

I found Solti's reading of Mozart's Symphony No. 40, however, a bit too weighty and measured, probably because I heard it along with the sharply contrasting performance by the Orchestra of the 18th Century, another recently established multinational ensemble, this one using period instruments. The orchestra is under the direction of its founder, the recorder and flute virtuoso Frans Brüggen, and if the performances on this Philips disc are any yardstick, he is without question a virtuoso of the baton as well.

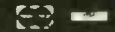
In contrast to the big and relatively coarse sound of the COE's modern instruments, the sound from the Orchestra of the 18th Century is singularly lithe and transparent. Brüggen's tempos and phrasing in the opening of the Mozart are subtly flexible without ever lapsing into the eccentric. The slow movement is taken as a true andante, not as a quasi adagio, and the pervasive double-note figuration becomes part of the general texture rather than the obtrusive element it can be on modern instruments. The famous minuet is taken with a lighter hand than usual, and the finale goes like the wind. Unlike Solti, Brüggen is generous with repeats where called for.

Just as revelatory is this "original instruments" version of Beethoven's First Symphony. Brüggen seems intent here on demonstrating the considerable contrast between even the youthful Beethoven and his immediate late-eighteenth-century predecessors. The introduction carries unmistakable weight, and the ensuing allegro is taken at a more deliberate pace than usual. The *con moto* element in the *andante* is much to the fore, while the menuetto is treated as a true scherzo. The finale gets a handsome, virile treatment, and the

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brazen sound of the horns in the later pages is truly startling.

The Brügger recordings were done in concert, complete with applause, the Mozart in the Amsterdam Concertgebouw and the Beethoven in Utrecht. Obtrusive audience noise is at a minimum, however, and the sonic quality overall is beyond reproach. In short, a fine disc. *D.H.*

MOZART: Piano Trio in E-flat Major ("Kegelstatt," K. 498); Duos for Violin and Viola in G Major (K. 423) and B-flat Major (K. 424). Gidon Kremer (violin); Kim Kashkashian (viola); Valery Afanassiev (piano). DEUTSCHE GRAMMOPHON ① 415 483-1 \$10.98, ② 415 483-4 \$10.98, ③ 415 483-2 no list price.

Performance: *Whimsical*
Recording: *Excellent*

MOZART: Duo for Violin and Viola in B-flat Major (K. 424). MOSZKOWSKI: Suite in G Minor for Two Violins and Piano, Op. 71. SARASATE: Navarra (Danza Espagnole) for Two Violins and Piano, Op. 33. Ani Kavafian (violin); Ida Kavafian (violin, viola); Jonathan Feldman (piano). NONESUCH ① 79117-1 \$10.98, ② 79117-4 \$10.98.

Performance: *Warm*
Recording: *Fine*

Gidon Kremer and Kim Kashkashian are both masters of whimsical elegance. Mozart, too, is a master of whimsical elegance. It is no wonder, then, that Kremer and Kashkashian's Deutsche Grammophon recording of three Mozart pieces is largely a delight. Besides whimsy and elegance, there is a lot of substance in these works, especially the B-flat Major Duo, the more ambitious of the pair. My only criticism of this release is that the mellowness and russet subtleties of the *Kegelstatt* Trio, originally scored for piano, viola, and clarinet, are lost by the substitution of a violin for the clarinet. I can certainly understand why Kremer would want to perform such a lovely work, but even his fine playing cannot wholly compensate for the loss.

The talented sisters Ani and Ida Kavafian are best represented on their Nonesuch release by the Moszkowski suite. This rarely heard work ranges in mood from the energetic to the sentimental, and it is fleshed out with constant invention and a good deal of dramatic contrast. The reading is excellent and well thought out. The Sarasate piece, too, is of great interest and makes, as one would expect, full use of the violin's technical and coloristic possibilities. There are moments, however, when the performers' technique is strained. The performance of the Mozart duo is charming but often lacks direction and consequently an overall musical line. The recorded sound, though, is consistently fine. *S.L.*

PURCELL: Dido and Aeneas (see Best of the Month, page 99)

RACHMANINOFF: Piano Concerto no. 1, in F-sharp Minor, Op. 1; Piano Concerto No. 2, in C Minor, Op. 18. Zoltán Kocsis (piano); San Francisco Symphony, Edo de Waart cond. PHILIPS ① 412 881-1 \$10.98, ② 412 881-4 \$10.98, ③ 412 881-2 no list price.

Performance: *Lots of glitter*
Recording: *Very good*

With this release, Zoltán Kocsis and the San Francisco Symphony under Edo de Waart complete their Rachmaninoff concerto cycle. My reaction to this coupling of the first two concertos is pretty much the same as what I felt about this team's performance of the Third and Fourth Concertos—more razzle-dazzle than soul. Kocsis and De Waart rip through the First Concerto in just twenty-five minutes. I'll admit, however, that the playing in the finale, including the lyric interlude, is nothing short of sensational—a *la* Horowitz in the 1940's.

Things calm down a bit for the popular Second Concerto, and the execution of its first movement is fairly even-tempered. Again, however, it is the fantastic velocity of Kocsis's playing that seizes the attention in the middle section of the slow movement and throughout the finale. De Waart elicits sharp and telling responses from his orchestra in both works, and the sound is clean—a bit bright in the midrange and a bit cool in the lower registers. *D.H.*

RAVEL: String Quartet in F Major (see DEBUSSY)

SARASATE: Navarra for Two Violins and Piano, Op. 33 (see MOZART)

SCRIABIN: Symphony No. 1, in E Major, Op. 26. Stefania Toczyska (mezzo-soprano); Michael Myers (tenor); Westminster Choir; Philadelphia Orchestra, Riccardo Muti cond. ANGEL ① DS-38260 \$11.98, ② 4DS-38260 \$11.98, ③ CDC-47349 no list price.

Performance: *Fierce*
Recording: *Superb*

For his first major orchestral work, composed between the Third and Fourth of his piano sonatas, Alexander Scriabin was not content to create a four-movement work of standard dimensions. He came up instead with six contrasting movements in a hyper-Romantic, post-*Tristan* idiom, concluding with vocal soloists and a chorus singing his own text in praise of Art. And whatever he may have lacked in terms of a full command of symphonic form, he more than made up in orchestral color, which is alternately lush and iridescent.

By far the most striking part of Scriabin's First Symphony is the fourth movement, a scherzo as fleet and scintillating as if it were composed by a post-Wagnerian Mendelssohn. On either side of it are movements both languorous and sensual, replete with expressions of stormy hothouse passion.



Ida Kavafian: excellent Moszkowski

The last movement conveys a fine song-like quality in the vocal solo and duet episodes, but it becomes rather stodgily academic when a fugal texture is introduced to pave the way for the final choral apotheosis.

The work's faults notwithstanding, the Philadelphia Orchestra and Westminster Choir under Riccardo Muti perform it with passionate conviction in a stunning recording made at the Memorial Hall in Philadelphia's Fairmount Park. During the more passionate climaxes, I kept thinking how Leopold Stokowski's spirit must have delighted in the sheer power and richness of the sonorities produced under a successor who has more or less disavowed "the Philadelphia Sound." On the evidence of this disc, that sound is still very much alive when the occasion demands. *D.H.*

SHOSTAKOVICH: Symphony No. 10, in E Minor, Op. 93. Philharmonia Orchestra, Simon Rattle cond. ANGEL ① DS-38285 \$11.98, ② 4DS-38285 \$11.98, ③ CDC-47350 no list price.

Performance: *Passionate*
Recording: *Good*

Generally acknowledged as the highest achievement of Shostakovich's purely orchestral scores, the Tenth Symphony has been a major testing piece of the modern-romantic repertoire from its very first performances back in 1953-1954. The first American recording, by Dimitri Mitropoulos and the New York Philharmonic for Columbia in 1954, set a very high standard, and Herbert von Karajan set the standard for the stereo era in his two recordings with the Berlin Philharmonic for Deutsche Grammophon. For all the passion Simon Rattle brings to this music in his new Angel recording, I feel that he lacks the last measure of fine-tuned control over the work to come through with a truly satisfying performance.

Rattle takes an unusually broad view of the long slow movement that opens the Tenth Symphony, but there is no sense of *longueur*. The line is sustained admirably, and a wonderfully warm tone is elicited from the Philharmonia strings. The terse and diabolic scherzo is notable for the attention-grabbing rhythmic attack of the strings, but I wish that the all-important snare-drum punctuation had been both more prominent and better defined. It's in the remarkable *allegretto* movement, which paves the way to the self-asserting finale, that I feel Rattle's interpretation fails to hold together. The orchestral playing is fine, however, and the recording is brilliant and spacious. *D.H.*

VIVALDI: *Il Catone in Utica*. Cecilia Gasdia (soprano), Cesare; Marilyn Schmiede (soprano), Marzia; Susanne Rigacci (soprano), Arbace; Margarita Zimmermann (mezzo-soprano), Emilia; Lucretia Lendi (mezzo-soprano), Fulvio; Ernesto Palacio (tenor), *Catone*; I Solisti Veneti, Claudio Scimone cond. ERATO/RCA ◉ NUM 75204 two discs \$21.96.

Performance: *Brilliant*
Recording: *Fine*

Vivaldi's opera *Il Catone in Utica* has one of Metastasio's most powerful librettos, which deals with the confronta-

tion of Julius Caesar and the Roman philosopher Cato the Younger in the North African city of Utica. Basically, Cato refuses to accept the concept of a dictator for Rome even if that dictator were his close friend, Caesar, a person of high ideals and justice. Also caught up in this conflict are Cato's daughter, Marzia, who is in love with Caesar, Pompey's widow, Emilia, whose husband has been murdered by Caesar, and their various lovers and suitors. Although the opera's missing first act—a pastiche by various composers including Vivaldi—has been lost, the remaining two acts stand by themselves as a complete dramatic unit. They show Vivaldi as a powerful operatic composer who drew his characters in full detail.

Twelve striking arias are interspersed with lengthy but highly expressive recitatives. Caesar and Emilia, sung by Cecilia Gasdia and Margarita Zimmermann, respectively, are assigned the largest roles with three arias each. Both artists are excellent and sing with a fine sense of style and projection. Both also manage Vivaldi's wide leaps and fierce coloratura with thrilling virtuosity. Zimmermann's mezzo rivals Marilyn Horne's in flexibility and richness. Marilyn Schmiede's Marzia is also powerfully sung. The remaining characters, assigned only one aria each, maintain the high vocal standard set by the princi-

pals. In keeping with Baroque performance practice, all of the singers are furnished with elaborate and difficult ornamentation for the repeats.

While the recitatives are of great interest and carry on the drama of the arias, there are several questionable practices in their realization. The alternation of harpsichord and organ, though effective, is questionable, and the use of double stops and virtuoso effects by the cellists seems curious. I Solisti Veneti, however, add a great deal of color to the drama with their technically superior playing, exquisite tone, and carefully worked-out articulation. They bring all the knowledge of Baroque performance practices to their modern instruments, and the opera moves forcefully along under Claudio Scimone's tightly paced direction.

The annotation should give us more information than it does. Who, for instance, are these wonderful singers? Who did the ornamentation? Is the cello part in the recitatives original or rewritten? Also, John Underwood's translation of the libretto is so deliberately archaic and convoluted that its meaning is often impossible to figure out. Nonetheless, this is fabulous Vivaldi, beautifully performed and recorded. The release should help restore Vivaldi's reputation as an opera composer to its rightful place—right at the top. *S.L.*

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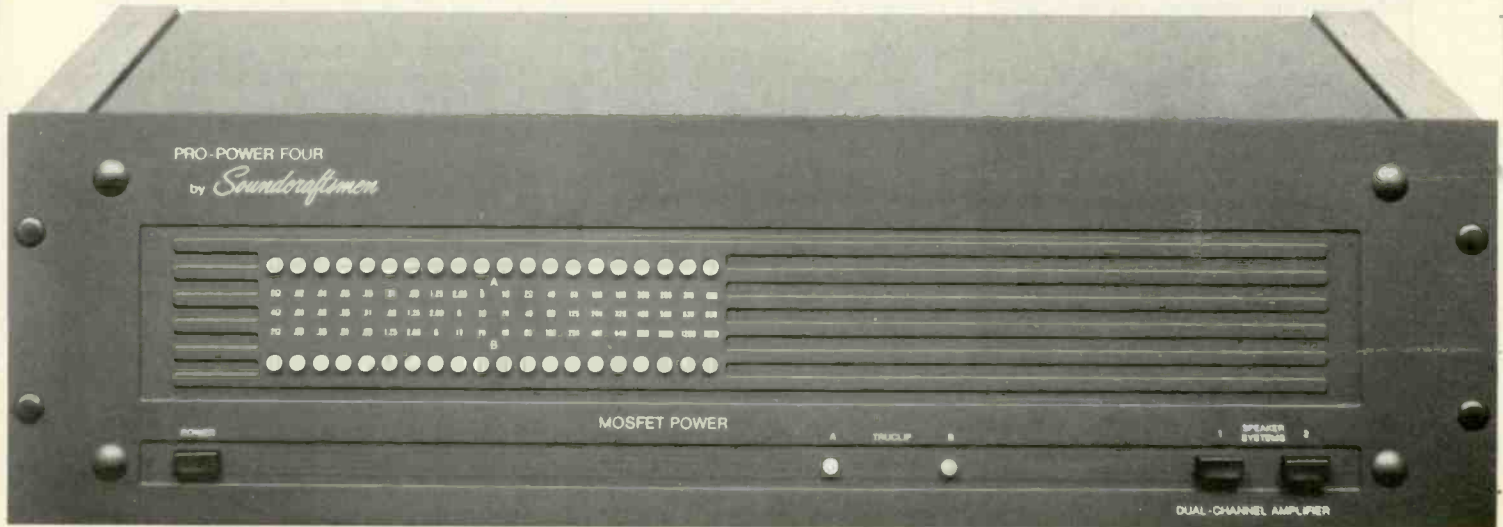
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VIDEO REVIEWS

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JOHNNY CASH: *Ridin' the Rails: The Great American Train Story.* Johnny Cash (vocals, guitar). *The Night They Drove Old Dixie Down; The Legend of John Henry's Hammer; Casey Jones; Wreck of the Old 97;* and six others. SONY B0241VH VHS Hi-Fi \$29.95, B0241BE Beta Hi-Fi \$29.95.

Performance: *Stalled on the tracks*
 Recording: *Fair*

Johnny Cash and trains just seem to go together—they're both big, they tend to dress in black, and they both have a sound all their own. Unfortunately, that's not enough to make this 1974 "documusical" a riveting hour of entertainment. The concept casts Cash as a wandering balladeer, meandering through time and showing up at golden moments in locomotive lore, and then singing about them, sometimes with an out-of-tune guitar. It's not what you'd call overwhelming. Cash strives valiantly to make the thing jell, but he never gets to sing a whole song, and the script, with its forced folksiness, works against him. This might have seemed livelier a decade ago, but in 1986 "Ridin' the Rails" appears to have run out of steam. *A.N.*

FALCO: *Rock Me Falco.* Falco (vocals); other musicians. *Der Kommissar; Rock Me Amadeus; Vienna Calling; Jeanny.* A&M VC-61015 VHS Hi-Fi \$19.95, BC-61015 Beta Hi-Fi \$19.95.

Performance: *Rock echt Wien*
 Recording: *Good*

Bilingual Viennese rock star Falco (né Hans Hoelcel) makes his inimitable way through four basically unrelated videos here. *Der Kommissar*, his first hit, is done up in a sort of proto-*Miami Vice* manner, with the star cavorting in traffic; like *Jeanny*, a wildly overripe romantic production number, it is basically dull stuff.

Far better are *Rock Me Amadeus*, in which Fal appears both as a lounge singer and a punk Mozart surrounded by Hell's Angels, and *Vienna Calling*, which begins with a Strauss waltz played on a touch-tone phone and is a goofily endearing dance clip somewhere between Fred Astaire and Fred Flintstone.

Has this guy got any talent beyond being photogenic? The jury is probably still out, but I've been humming the

LOOKING BACK

A DOCUMENTARY look at Bob Dylan's 1965 British tour, D. A. Pennebaker's *Don't Look Back* is one of the legendary artifacts of the Sixties and was hailed at the time as some sort of definitive statement on the (ahem) youth culture. Now Paramount has released it on videocassette, and while it seems somewhat less profound than it did two decades ago, when we were all young and drug-addled, it is still a fascinating film.

Pennebaker is a man who has been in the right place at the right time with some regularity, documenting such landmarks as the Monterey Pop Festival and David Bowie's "retirement." His film catches Dylan and his entourage backstage, in various hotel rooms, and in interview situations, all interspersed with a generous number of concert performances. These include a version of *Gates of Eden* that, in particular, makes you realize why Dylan hit people so hard: he's truly mesmerizing. He also comes across as something of a brat, at times rather cruel, and as a man with an inordinate need to be surrounded by sycophants. One can only speculate as to why he was willing to have this clearly unflattering portrait released.

All in all, as a glimpse at the transitional period between the pop world's early Sixties innocence and its later decline into decadence, *Don't Look Back* remains an important cultural artifact. Like most Sixties documentaries, its hand-held informality and arbitrary cutting eventually get on your nerves, but the home version is worth buying if



only for its opening scene: Dylan in some scuzzy alleyway, holding up cue cards to the lyrics of *Subterranean Homesick Blues* while the song plays loudly on the soundtrack. It is an example of what today we'd call a "video"—and it's one of the coolest ones ever made. *Louis Meredith*

DON'T LOOK BACK. With Bob Dylan, Joan Baez, Alan Price, Donovan, Albert Grossman, Bob Neuwirth, others. PARAMOUNT 2382 VHS Hi-Fi and Beta Hi-Fi \$39.95.

chorus to *Vienna Calling* almost non-stop since I saw this tape, and I say give him the benefit of the doubt. *L.M.*

JOHN LENNON: *Imagine.* John Lennon, Yoko Ono, Jack Palance, and other actors and musicians. *Imagine: Crippled Inside; Jealous Guy; Gimme Some Truth; Oh My Love; How Do You Sleep;* and seven others. SONY R0429VH VHS Hi-Fi \$29.95, R0429BE Beta Hi-Fi \$29.95; PIONEER PA-86-164 LaserDisc \$24.95.

Performance: *Dated but interesting*
 Recording: *Excellent*

John Lennon and Yoko Ono are on view here in a "legendary" promotional film for John's "Imagine" and Yoko's "Fly" albums. The imagery, notwithstanding a rather startling flying Rohrschach ink blot, is pretty banal: Yoko as hippie princess, gazing longingly at hubby; John eating chess pieces in a mysterious white room; the couple frolicking in a garden, and so on. I don't know what a generation weaned on the MTV

format of vague story lines and fast cutting will make of all this, but to me it looks like the kind of bad student films we all suffered through in college, and Yoko is the kind of negative screen presence that makes you nostalgic for the Maharishi.

Still, as a period piece, this video is not without interest, and there's one major redeeming factor: the sound. In fact, if you've worn out your copy of "Imagine," the VHS and Beta Hi-Fi tracks here make buying a new record unnecessary. *L.M.*

MADONNA: *Live—The Virgin Tour.* Madonna (vocals); other musicians. *Dress You Up; Holiday; Into the Groove; Everybody; Gambler;* and five others. PIONEER PA-86-160 LaserDisc \$24.95.

Performance: *Vegas glitz*
 Recording: *Sensational*

Madonna may have all the soul of a Jordache girl, but let's give credit where credit is due: that weird little Munchkin voice of hers is a sublimely silly pop

sound. Indeed, Madonna may well be a female Frankie Valli for the Eighties, and I mean that as a compliment. We would do well to remember, though, that Frankie and the rest of the Four Seasons went from sublime silliness to Las Vegas glitz in fairly short order, and on the basis of this new video, I'd say Madonna has already made a similar transition.

What's on display here is indistinguishable from the kind of club acts purveyed by such luminaries as Cheryl Ladd and Raquel Welch. For most of it, the once and future Material Girl is accompanied by a brace of obnoxious chorus boys (one of whom is named, so help me, Lyndon B. Johnson). She changes clothes a lot (in *Like a Virgin* she wears what a character in *Who's Afraid of Virginia Woolf* refers to as a "Sunday-go-to-meeting dress") and dances with all the professional aplomb of your next-door neighbor's kid sister. She also indulges in some shameless cornball show-biz emotionalism ("crying" for joy at being back in Detroit, where this was shot) and turns the act of tossing a tambourine into an exercise in suspense worthy of Hitchcock.

To be fair, the show moves along smartly, the boys in the band sound terrific, and Pioneer's digital audio is extremely impressive. *L.M.*

MOTOWN TIME CAPSULE: The 60's. The Four Tops: *I Can't Help Myself*. The Miracles: *Shop Around*. Marvin Gaye: *Pride and Joy*. The Temptations: *The Way You Do the Things You Do*. Stevie Wonder: *For Once in My Life*. And five others. MOTOWN/MCA 80395 VHS Hi-Fi \$29.95.

MOTOWN TIME CAPSULE: THE 70's. The Jackson Five: *Dancing Machine*. Smokey Robinson: *Cruisin'*. Marvin Gaye: *What's Going On*. The Commodores: *Easy*. Stevie Wonder: *Living for the City*. And five others. MOTOWN/MCA 80396 VHS Hi-Fi \$29.95.

Performances: *Engrossing*
Recordings: *Very good*

It would be difficult to review the Sixties and Seventies, from an American point of view, without somewhere along the line bringing in the unique Motown beat. It is therefore quite appropriate for Motown Productions to dip into its vaults, extract choice morsels, and mix them well with visuals of the day. That is precisely the recipe for these two new fifty-minute videos. The visual material comes mainly from television commercials and stock footage, but there are also some Monty Pythonish animated collages.

There are ten segments in each video, one for every year in each decade, and each has a Motown hit single as its foundation. We've seen this kind of montage before and, indeed, you'll probably recognize some of the footage, but the editing keeps the images moving at a brisk pace. Recommended. *C.A.*

MOZART: *The Abduction from the Seraglio*. Valerie Masterson (soprano), Constanze; Lillian Watson (soprano), Blonde; Ryland Davies (tenor), Belmonte; Willard White (bass), Osmin; James Hoback (tenor), Pedrillo; Joachim Bissmeier, Pasha Selim. Glyndebourne Festival Chorus; London Philharmonic Orchestra, Gustav Kuhn cond. VIDEO ARTS INTERNATIONAL 69023 VHS Hi-Fi \$69.95, 29023 Beta Hi-Fi \$69.95.

Performance: *Appealing*
Recording: *Good*

This video cassette is characterized by two particularly attractive qualities. First, the two pairs of lovers around whom the opera's action revolves are played by engaging young people who act well and are therefore believable in their roles. Second, the five singing parts of the opera (the role of Pasha Selim is spoken) are enhanced by true, pure, fresh, and unforced voices.

Valerie Masterson copes with Constanze's wicked tessitura and ornamentation with ease; there is no shrillness or forcing. Lillian Watson is a pert and charming Blonde. The two tenors, Ryland Davies and James Hoback, as master and servant, respectively, are warm, winning, and musically satisfying. In Willard White we have at last an Osmin who can call up some sympathy, for he plays the part as a rather pleasant, blundering bully who provides some genuinely funny moments; his rich bass is ideal for the role.

The chorus and orchestra under Gustav Kuhn sing and play with verve and style. The recorded sound is well balanced and clear. The action of Mozart's *Singspiel* is made plain by subtitles that are neither so lengthy nor so literal that they detract from the proceedings. The size of the opera is scenically well suited to the small Glyndebourne Festival stage.

Granted that Mozart and his librettist created some rather heavy-handed comedy that is difficult to lighten, this production by and large succeeds. I did wonder why the camera was allowed to dwell on Constanze at close range during her very difficult first aria; no singer can look beguiling while executing that music. I also question having her most demanding scene (ending with "*Marten aller Arten*" played in a room distractingly and exclusively furnished with caged birds—granted they are "symbols," though rather obvious ones. And why is Pedrillo gratuitously given spectacles to wear when they add nothing to his character? But I really liked the staging of the quartet of the reunited lovers, an extended passage that is sung and acted with joyous fervor. I can recommend this cassette to those who admire Mozart's delicate score and who will enjoy a tasteful dramatic presentation of the opera's occasionally silly but winning story. *R.A.*

TOM PETTY & THE HEARTBREAKERS: *Pack Up the Plantation*.



Madonna: sublimely silly

Tom Petty (vocals, guitar); the Heartbreakers (background vocals, instrumentals); the Soul Lips Horns (brass); the Rebelettes (background vocals). *American Girl; You Got Lucky; It Ain't Nothin' to Me; Don't Do Me Like That; The Waiting; I Need to Know; Don't Come Around Here No More; Spike; Southern Accents;* and eight others. MCA 80328 VHS Hi-Fi and Beta Hi-Fi \$29.95.

Performance: *Cookin'*
Recording: *Average remote*

Like the live album of the same name, *Pack Up the Plantation* is a compilation of two Tom Petty performances recorded at L.A.'s Wiltern Theatre last August. Six of the songs represented on the LP are not included here, but the video offers seven other tunes not on the double album, including the Top-Ten hit *Don't Do Me Like That*. Petty is not the most mesmerizing showman, but he does have a presence, and when that begins to wear thin he always has a great band behind him in the Heartbreakers, particularly guitarist Mike Campbell and keyboard player Benmont Tench. For this tour, Petty added back-up singers and a horn section, which give the songs more bite and add an urgency to the overall, brooding sound. This is pretty much a powerhouse performance, weakened only a couple of overlong vamps and by the dark, available-light shooting. *A.N.*

RUSH: *Through the Camera Eye*. Rush (vocals and instrumentals). *Distant Early Warning; Vital Signs; The Body Electric; Afterimage;* and four others. PIONEER PA-85-112 LaserDisc \$19.95.

Performance: *Has its moments*
Recording: *Very good*

Rush has gone from mediocre heavy-metal to a not inestimable mixture of Police-style atmospheric, old-school Seventies art rock, and social comment,

but this collection of (mostly) recent videos raises a question also raised by far too much of what's on MTV: Why bother? Fact is, the songs here do not exactly scream out for visualization. One significant exception is *Subdivisions*, in which director Grant Lough paints an interesting picture of suburban sterility and conformity and brings an otherwise fairly dour little song to life. *L.M.*

BARBRA STREISAND: *Putting It Together—The Making of the Broadway Album*. Barbra Streisand (vocals); orchestra. CBS/Fox 7101 VHS Hi-Fi and Beta Hi-Fi \$29.98; 7101-80 LaserDisc \$29.98.

Performance: *Self-indulgent*
Recording: *Excellent*

Barbra Streisand is, of course, a superstar, but "Putting It Together," the video that documents the making of her highly successful "The Broadway Album" is by its very nature self-indulgent. Now I greatly admire Streisand's singing and have been a fan since I first heard her slowly glide her voice through *Happy Days Are Here Again* on the old *Tonight* show, but aren't they making too much of an event out of this album? After all, Streisand has made better albums without any hoopla, and the interview with film director William Friedkin (taped at Harlem's Apollo Theatre, of all places) is the sort of thing I used to get as promotional material in my disc-jockey days. Some viewers might find the glimpses of behind-the-scenes studio activity interesting, and there are pleasing fragments of music, but they're only fragments. *C.A.*

THE WHITE ANIMALS: *Home Movies*. The White Animals (vocals and instrumentals). *This Girl of Mine; Girls; I Need You So; Don't Care*; and six others. DREAD BEAT VHS \$19.95 (from the Music Shop, 1-800-FOR-A-HIT).

Performance: *Endearing*
Recording: *Mostly good*

The White Animals are one of the most original of the currently fashionable roots-oriented guitar bands, and while they aren't as well known yet as, say, the Long Ryders, they're a lot more rewarding. In fact, their canny mixture of Jamaican dub techniques with the usual Sixties influences make them a kind of oxymoron—a band that's both retro and up-to-date.

"Home Movies," which comes off as a thirty-six-minute Eighties American version of *A Hard Day's Night*, catches the guys in various self-produced videos, TV interviews, and live performances. It's appealingly low budget and often very funny in a deadpan Southern way. Leader Kevin Gray demonstrates the kind of unselfconscious screen presence that makes most of the fashion casualties and preening narcissists you see on MTV look like the wonks they obviously are. A video that's definitely worth a look. *L.M.*

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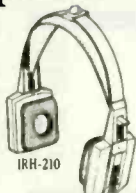
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by Christie Barter
& Steve Simels



Prince: monosyllabic

RECENTLY and aptly described by comedian Dennis Blair as "Little Richard in Mozart's clothes," Prince is not widely celebrated for his humility. Perhaps as an attempt to demonstrate the common touch, he's been making a series of surprise, small-auditorium concert appearances around the country recently. We applaud the gesture, but serious pop scholars should be on the lookout for an absolutely astonishing interview aired recently on the USA cable network. Prince, surrounded by his band (who treat him with

Lloyd: futuristic



the deference of courtiers to Louis XIV), responds to a series of perfectly civil questions with exactly the same kind of sullen, monosyllabic contempt favored by pop stars of the Sixties when they dealt with hopelessly square interviewers like Joe Pyne or Les Crane. Not content to recycle psychedelia, the guy is also recycling another era's arrogance. □

CONSUMER QUIZ: Q—What's the world's first rock-and-roll science-fiction Oedipal comedy? A—*Back to the Future*, of course. And we are pleased to report that the box-office champ of 1985 is now the Home Video Event of 1986. For our money, this wonderful Capra-esque fantasy starring Michael J. Fox and Christopher Lloyd would have cleaned up at the Oscars had it not been for the Motion Picture Academy's well-documented aversion to giving major awards to comedies, but no matter. MCA's tape and LaserDisc transfers work beautifully on the small home screen, and the digitally mastered audio track in all formats has great sound effects, a nice John Williamsish orchestral score, Huey Lewis warbling *The Power of Love*, and Fox rampaging through *Johnny B. Goode*. It sounds like a million bucks. □

WHEN London Records released Marilyn Horne's new album, "Beautiful Dreamer," the company invited the musical press corps to join Miss Horne in a visit to the newly refurbished Statue of Liberty. We boarded a luxurious yacht, sailed out into New York Harbor, and anchored in front of the statue.

A small Steinway was on board, and Miss Horne had agreed to sing a few of the traditional and patriotic songs from the album. Before singing *God Bless America*, she spoke touchingly of the late Kate Smith, who was closely associated with this song. "She had a great natural instrument," said Miss Horne, "and when I was growing up, she stood for a lot that was American. I suppose we thought that like the Statue of

Liberty she'd always be there." Then she sang *Beautiful Dreamer* and her signature tune, *Jeannie with the Light Brown Hair*.

Miss Horne says she is fond of these old songs because they were what she performed as a young singer on her first professional engagements at fund-raising luncheons and political rallies. Asked how she is able to keep her interpretations of these songs sounding fresh and deeply felt, she said, "Because they're good!" □

YOU can see and hear violinist Itzhak Perlman when the opening-night performance of the New York Philharmonic is broadcast live by PBS stations on September 16.

On the Philharmonic program, conducted by Zubin Mehta, Perlman is the soloist in Ravel's *Zigane*, Chausson's *Poème*, and Sarasate's *Carmen Fantasy*. Perlman has renewed his ties with EMI and Angel Records, and immediate plans call for recordings of Bach's Sonatas and Partitas for Unaccompanied Violin as well as concertos by



Horne and Miss Liberty

Glazounov, Bruch, and Shostakovich.

Preceding the Philharmonic on PBS is a program documenting the wide-ranging work of Leonard Bernstein. Titled "Bernstein: Conductor, Soloist, and Teacher," it was filmed at the Musikverein in Vienna but includes footage of a master



Perlman: opening the season

class Bernstein gave for gifted young conductors in Los Angeles. The air date is September 12.

In June President François Mitterrand of France promoted Bernstein to the rank of Commander of the Legion of Honor in a ceremony at the Elysée Palace in Paris. Perlman received an honorary doctorate from Harvard University in Cambridge, Massachusetts, the same month. □

THIS year's winner of the Pulitzer Prize for Music was George Perle, who received the award for his *Wind Quintet IV*. At a luncheon given by the American Society of Composers, Authors and Publishers to celebrate the honor conferred on one of its members, Perle said, "When Charles Ives was told that he had won this prize in 1947, he was seventy-three years old. He said, 'Prizes are for boys, and I grew up a long time ago.'

"I'm seventy-one," Perle continued, "and I'm still enough of a boy to enjoy this very much." □

HARD to believe, but the Nitty Gritty Dirt Band (which was just the Dirt Band for a brief period in the Seventies) has now joined that select group of rock bands that have been playing together and been commercially successful for twenty years. To celebrate this anniversary—shared by, among others, the Rolling Stones, the Kinks, and the Moody Blues—the N.G.D.B. recently presented a concert featuring such fa-

EBET ROBERTS

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CHRISTIAN STEINER/ANGEL

mous friends as **Emmylou Harris** and **Rodney Crowell** and released a "Twenty Years of Dirt" album (Warner Bros.) and the brand-new single *Stand a Little Rain*. Appropriately, the concert, originally scheduled for Denver's famous outdoor Red Rocks Amphitheater, was rained out, and the band had to relocate to an indoor venue. □

THE painter **Tom Wesselman** likes to listen to country music while he's working. The "underlying sadness" of the songs, he said, makes him happy. He's also a bit of a songwriter himself, so he was a natural candidate for the latest mixed-media project cooked up by producer **Jeff Gordon** and his wife, **Juanita**. It's "Artsounds Collection," a two-record set of recordings by visual artists



Wesselman's "Artsounds"

who fancy themselves at least part-time musicians and songs by professional musicians who fancy themselves passable amateurs as visual artists—the package itself has representative graphics from both camps.

"Artsounds" is scheduled for release by Philips Records

Easter, Abbado, and Vega: a potential blockbuster



EBET ROBERTS

this month to coincide with an exhibition of the album art at the Nohra Haime Gallery in New York—a show that's due to travel to other cities in the U.S. as well. Among the painterly contributors to the collection, in addition to Wesselman, are **Larry Rivers**, **Jonathan Borofsky** and **Keith Haring** along with the architect **Philip Johnson**. Among the professional musicians is **Daryl Hall**.

Says Gordon, "Pop music is art, and art is pop music. Occasionally you find someone who is so identified with [the] one that [his work in the other field] can be a terrific surprise. John Lennon had that quality. So does Daryl. Juanita and I love his drawings." Hall himself has a new solo album on RCA titled "Three Hearts in the Happy Ending Machine." It's his first solo album since 1979 and only his second apart from partner **John Oates**. □

WHAT, asked Sigmund Freud, do women want? In the case of neofolkie **Suzanne Vega**, with a highly regarded debut LP under her belt, a song on the hit soundtrack to *Pretty in Pink*, and a prestigious collaboration with **Philip Glass** ("Songs from Liquid Days"), probably nothing would make her happier than her very own Platinum album. As **Chuck Berry** put it, you never can tell. Helping out on the recording of her as yet untitled new album, a potential blockbuster, is guitarist/producer **Mitch Easter**, best known for his brilliantly imaginative work with **REM**.



Blegen: back at the Met

Easter is probably an ideal collaborator for the slightly eccentric Ms. Vega, and if coproducer **Steve Abbado** gives him a free hand, the recorded results, due soon on A&M, could be fascinating. □

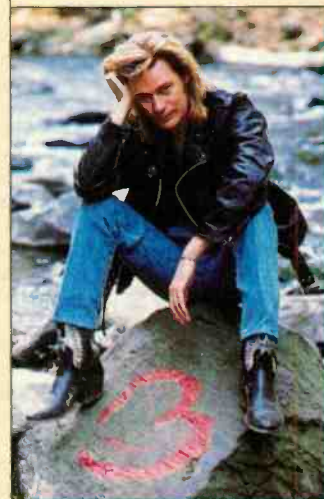
AND, speaking of **REM**, everybody's favorite purveyors of gothic Southern folk-rock are readying their own new bid for Platinum status. Entitled "Lifes Rich Pageant" (you read it right: no apostrophe in "Lifes"), the I.R.S. album is produced by **Don Gehman**, best known for his explosive work with **John Cougar Mellencamp**. Does this mean the reflective and often inscrutable **REM** is moving toward Mellencamp's brand of Midwestern big-beat populism? All we know is that **REM** guitarist **Peter Buck** claims the album "rocks out." □

FEATURED among the soloists in an important new premiere recording on RCA is the American soprano **Judith Blegen**, whose discography continues to grow on a number of labels. The work in question here is Handel's recently discovered *Roman Vespers*, which remained unpublished until 1984.

Blegen's previous Handel/RCA credits include the oratorios *Judas Maccabaeus* and *Messiah*, and Deutsche Grammophon will soon be releasing a recording of Haydn's *The Creation* in which she is one of the soprano soloists under **Leonard**

Bernstein's direction. But as Blegen's fans across the country know well, her repertoire is in no way limited to early music. Blegen returns to the Met this season, in fact, to sing in a new production of **Johann Strauss's** *Die Fledermaus* and will appear during the Paris Opera's spring season in Stravinsky's *The Rake's Progress*. □

GRACENOTES. Rolling **Stone Keith Richards** was seen hobnobbing with record execs in New York recently. Apparently his long-awaited solo album will materialize sooner than expected. . . . Latest in Polydor's excellent series of rock reissues: "The Best of Mercury Vocal Groups of the 50's," featuring newly remastered versions of hits by the **Platters**, the **Del-Vikings** (the first integrated rock group), and the **Penguins**. . . . More Proof of the Existence of God: The surviving **Beatles** recently won a \$10,000,000 judgment in their suit against the producers of the stage and film versions of *Beatlemania*. . . . Wretched Excess: Venerable oldie *Twist and Shout*, a



Hall: going solo

hit for the **Isley Brothers** and the **Beatles**, figures prominently in the soundtrack of two current hit films, **Rodney Dangerfield's** *Back to School* (Rodney sings it himself!) and *Ferris Bueller's Day Off* (Matthew Broderick lip-syncs to the Beatles' version). □

THEA DISPEKER

PAUL ELLEDGE/HOWARD BLOOM

NEW PRODUCTS



B&W

The Matrix 1 speaker from B&W houses a 5 $\frac{7}{8}$ -inch woofer and a 1-inch dome tweeter in a cabinet designed for minimal resonance and coloration. The drivers are made of a homopolymer polypropylene said to have twice the stiffness of copolymer polypropylene. Inside the enclosure, interlocking honeycomb panels brace all sides of the speaker; the space between the panels is filled with acoustic foam. The cabinet is said to have exceptionally low vibration and very fast decay time.

Frequency response is given as 55 to 35,000 Hz \pm 6 dB. The Matrix 1 is recommended for use with amplifiers delivering between 50 and 120 watts per channel. Sensitivity is rated as 85 dB sound-pressure level with an input of 1 watt. Optional stands have bases of black Italian marble and columns of filled steel. Price: \$998 per pair in walnut or black ash, \$1,398 in rosewood; stands, \$199 per pair. The other speakers in the series are the Matrix 2 (\$1,398 in walnut or black ash, \$229 for stands) and the floor-standing Matrix 3 (\$1,998 in walnut or black ash, \$2,798 in rosewood). Anglo-American Audio, Dept. SR, P.O. Box 653, Buffalo, NY 14240.

Circle 129 on reader service card

Polk

The SDA-SRS-2 from Polk Audio is the second model in Polk's Signature Reference System series. Each speaker contains a planar 15-inch sub-bass radiator, four 6 $\frac{1}{2}$ -inch woofers, and two 1-inch dome tweeters. The drivers, in Polk's Stereo Dimensional Array configuration, are time compensated and phase coherent for high clarity, low distortion, high power handling, wide dynamic range, and accurate imaging. Crossover frequencies are 45 and 2,000 Hz. The speakers are rated for up to 750 watts of power. The cabinet has elaborate bracing for low sound coloration.

The speakers are rated for a frequency response of 30 to 20,000 Hz \pm 3 dB, with a nominal impedance of 4 ohms. They measure 20 $\frac{3}{4}$ inches wide, 50 inches high, and 12 $\frac{1}{4}$ inches deep. Price: \$1,990 per pair. Polk Audio, Dept. SR, 1915 Annapolis Rd., Baltimore, MD 21230.

Circle 37 on reader service card



Nakamichi

The Stasis power-amplifier sections in Nakamichi's SR-3A (shown) and SR-2A receivers are rated, respectively, for 45 and 30 watts continuous average output per channel. The Stasis circuitry is designed to provide large power reserves for transient peaks and uniform output impedances to drive almost any speaker. Both receivers have inputs for moving-magnet cartridges, a CD player, a tape deck, and an auxiliary source. The SR-3A can also accept both low- and high-output moving-coil car-

tridges. The quartz-locked PLL-synthesized AM/FM tuner section is identical in both receivers, with presets for ten stations and a choice of manual or automatic tuning.

An infrasonic filter in the phono-preamp section of the 3A rolls off frequencies below 20 Hz at a rate of 12 dB per octave. Peak current output is rated as 18 amperes per channel for the 3A, 14 amperes for the 2A. Prices: SR-3A, \$599; SR-2A, \$449. Nakamichi, Dept. SR, 19701 S. Vermont Ave., Torrance, CA 90502.

Circle 130 on reader service card





Celestion

The Celestion System 6000 is an enclosureless subwoofer designed to be used in pairs with Celestion's SL600 (as shown) or with any other SL series speaker. Each subwoofer unit is only 15 inches wide and has two 12-inch drivers mounted on twin baffles, eliminating the need for a cabinet. An individual active crossover/equalizer is wired between the preamplifier and the power amplifier for each subwoofer. Because the input signal is divided at line level, the satellite and subwoofer pairs require separate power amplifiers.

The subwoofer's low-bass output rolls off at 6 dB per octave. A single control on the first-order equalizer can extend the point where rolloff begins from 70 Hz down to 20 Hz. The crossover, "designed on the basis of a minimal-signal-path topology to preserve the SL-600's transparency and stereo presentation," uses a fourth-order Linkwitz-Riley alignment, with a crossover point of 100 Hz. Four concealed spikes in the subwoofers' built-in stands can pierce floor coverings to provide a rigid foundation. The satellite speakers sit on rotating plates that can be firmly clamped after adjustment. Price: \$3,300 per pair with electronic controller. Celestion, Dept. SR, Kuniholm Dr., Holliston, MA 01746.

Circle 131 on reader service card

Parasound

The Bass Perfect Image-Amplified BPI-A60 subwoofer from Parasound has a 12-inch driver with a 5-pound magnet powered by an equalized 60-watt rms amplifier in a heavily braced enclosure with 1-inch-thick walls. The subwoofer is rated to extend bass response down to 20 Hz \pm 3 dB. The crossover frequency is fully adjustable from 63 to 180 Hz, with a slope of 12 dB per octave, and the output level can be set by the user. An infrasonic filter attenuates frequencies below 16 Hz at 12 dB per octave.

The subwoofer accepts high-level inputs from a receiver or power amplifier or low-level inputs from a preamplifier. Although designed for use with Parasound's Compact Perfect Image CPI-440 speakers, the controls allow use with other speakers as satellites. The subwoofer measures 15 $\frac{3}{4}$ inches wide, 27 $\frac{1}{2}$ inches high, and 13 $\frac{3}{4}$ inches deep at its base. Finish is simulated rosewood. Price: \$449.95. Parasound, Dept. SR, 945 Front St., San Francisco, CA 94111.

Circle 132 on reader service card



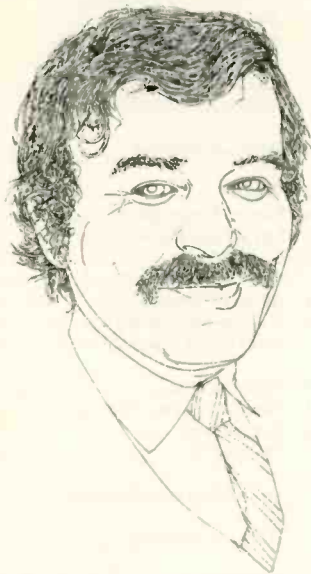
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SEPTEMBER

More New Products on page 15

by Ralph Hodges



Another Way

WHEN you ask a denizen of Minneapolis-St. Paul about the region's passionate and contrary obsession with the business of audio, "long winters" is the invariable retort. Well, if that were the only explanation, Lapland would now rule the high-fidelity industry. There must be more to this passion, and the word "contrary" may hold the key.

The people of the Twin Cities, although considering themselves normal by most definitions, take a certain wry satisfaction in seeming to be different. You get up in the morning and drive to work. They get up in the morning, turn a flame-thrower on the driveway for fifteen minutes, and then drive to work. (No joke. The 3M company, which broods over St. Paul like a mother hen, maintains a fleet of emergency vehicles to burrow through the snow and winch cars out onto the street on winter mornings.) The residents consider all of technology to be at their service, and they avail themselves of that service.

Does all this, perchance, shed any light on the fact that at times in the past, and even to some extent today, you could buy a complete high-end music system made exclusively in this snowbound region and legiti-

mately lay claim to its being not only the best in the world, but significantly different from almost anything else in the world? Mind you, no other municipality—not Cambridge, Massachusetts, in its heyday or Lapland in its surely glorious future—has ever been able to approach this status.

There was a time when you'd begin the system with a 3M/Wollensak cassette machine, easily the most reliable and sophisticated deck available during a period when Nakamichi was just learning how. If you scorned cassettes, 3M offered other options, up to thirty-two tracks of open-reel, at a good price. Alas, 3M's stockholders, many of them not Twin Cities residents, have irrevocably backed out of the business. That's contrary.

The amplifier would probably come from Bill Johnson's Audio Research, and although Johnson reports that his latest designs are at least 70 percent transistorized, there would still be tubes aglow inside. Johnson decides what's best for a certain place in the circuit architecture, and that is that.

It's an irony that, while Audio Research amplifiers are rarely encountered here, they are among this country's most esteemed exports. A part of the reason is probably that Audio Research's overseas distributors solicitously court press attention, while here at home Johnson does not. He's contrary. This is not to say that he regularly orders dissenters served up on toast, but he does feel that his product, take it or leave it, is statement enough. He fought hard for his company, selling his patents some years ago, then recovering them when he felt they were being ignobly served by the buyer, and forging ahead on his own once more. He is not about to be deterred by the whimsical carping of journalists, or even by United Parcel Service. (You'd be surprised at how many amps are designed to fit UPS's 70-pound limit.)

In loudspeakers, the Twin Cities offers a number of options, but pride of place certainly belongs to Jim Winey's Magnepan. The Maggies, called planar-magnetic devices by Winey and resembling folding screens, are prominent among those reproducers that make you grateful

you have ears. They are contrary, however, because they are dipole radiators with a large and permeative diaphragm area, and placement in the listening room is all-important. It is possible to make them sound so disagreeable that anybody can tell there's something drastically wrong. And that is the key. When Maggies sound preposterous in a dealer showroom, it is fair to distrust the dealer. Possibly he doesn't know how they should sound either. Coming from White Bear Lake, Minnesota, they're inevitably difficult mechanisms.

Incidentally, full-range electrostatic speakers are also susceptible to all this grief, and they tend to get amplifiers out of breath as well. In part, Winey's intention in designing the Magnepan was to perfect the loudspeaker-amplifier union. His success is notable, and it was predicated, like many worthwhile things, on a sudden stroke of genius. In the midst of designing a child's game involving bar-magnet strips, Winey saw a way to grapple with the problems of the electrostatics he so admired. He took it to market and has successfully kept it there.

For the rest of the system, you'd be well enough advised to go to Frank Van Alstine, a dealer in the Twin Cities suburb of Burnsville. Van Alstine cannot look at or listen to an audio component for more than two minutes without wanting to tear it apart and make it better. At last report, he does this to amplifiers, tuners, and phono cartridges, but he's just getting started. When I last saw him, he was a bit delayed on a drive to New York because he stopped periodically to rebuild the car he was driving.

Van Alstine's modifications are not *always* for the best, but they're generally for the better. And when he finds a still better way, he'll hound you until you look into it. He modifies many brands of equipment, but he has always been partial to old Dynaco gear.

Maybe some of this gives you a sense of what the Minneapolis-St. Paul audio scene is all about. In any case, there's no denying that this stuff is world class. In fact, for many, it *defines* world class. And all this from a place where you're lost without a snowmobile! □

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