

Stereo Review

OCTOBER 1985 • \$1.95

**HOW TO CHOOSE
THE RIGHT TAPE**

HI-FI VCR'S: WHAT ARE YOUR OPTIONS?

NAD'S NEW AMPLIFIER: A BLOCKBUSTER!

FIRST LAB TESTS:

TOSHIBA'S DOUBLE-DISC CD PLAYER

ALSO TESTED:

KENWOOD KX-780 TAPE DECK

CANTON KARAT 300 SPEAKERS



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IF YOU COULD HEAR THIS TAPE,



YOU'D BUY THIS AD.

Introducing The Memorex CDX II. You've Got To Hear It To Believe It.

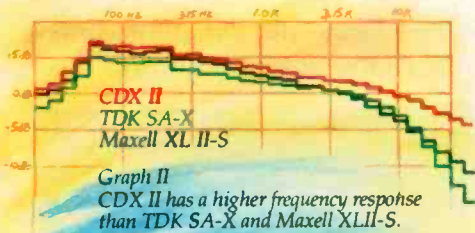
Without a doubt, the new Memorex® CDX II is in a very special class.

Consider these points:

- The CDX II is a metal tape that can be recorded and played at the high bias setting.

- The CDX II comes extremely close to matching (see Graph I) the capability of today's most challenging sound source—the Compact Disc.

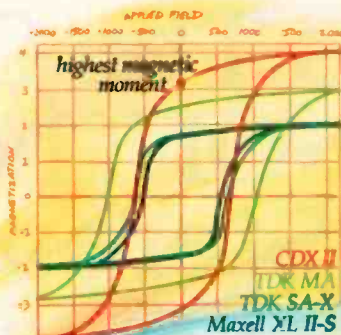
- The CDX II outperforms leading high bias tapes hands down. Fact is, we compared (see Graph II) the CDX II to TDK SA-X and Maxell XLII-S. The result? When it comes to high energy recording, no one can match our levels. That's right. No one.



What Makes The Memorex CDX II So Special?

A bona fide breakthrough in metal chemistry. The development of a super alloy. One which lets us turn iron, the most magnetic material there is, into a super-small particle only 12 millionths of an inch long.

This metal particle produces the highest magnetic moment of any tape we tested. Nearly twice as high as any conventional high bias tape—even higher than pure metal, until now the industry champ (see Graph III). To you, that translates into more head room. Which means you can accurately reproduce even the most sudden bursts of high energy sound that comes with the most demanding music sources.



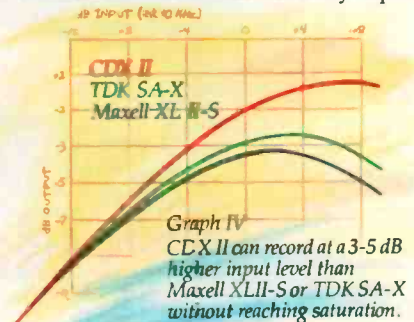
A Tape This Good Demanded A Superior Cassette.

So, we spent two years designing our new five-screw cassette from the ground up. This precision-engineered system assures that the CDX II works as great as it sounds. In fact, we guarantee it for life.

It Unlimits Your Limitations.

The Memorex CDX II can record critically demanding music substantially better than the best conventional high

bias tapes. At critical high frequencies, Memorex CDX II can faithfully repro-



duce music without saturating at a 3-5 dB higher input level (see Graph IV).

Now you can record at higher levels to minimize hiss, and still capture the loud passages, the peaks, the crescendos—without distortion or loss of high notes. In fact, you can almost capture the fantastic imaging digital discs have become famous for. But you can do it on tape. And do it with ease. Loud and clear. All at the high bias setting.

Compare The CDX II. You'll Find There's No Comparison.

We urge you to put loyalty aside and compare CDX II to the tape you're sold on now. Or, to any other tape you think can beat it. You'll never know what you're missing until you do.

Just send a dollar (to defray handling and shipping costs) to Memorex CDX II, P.O. Box 4261, Dept. B, Monticello, MN 55365, and we'll send you a new CDX II 90-minute cassette. Limit one per household. Allow 6-8 weeks for delivery (offer expires December 31, 1985).

*Comparison of CDX II performance versus Compact Disc containing high-energy electronic music. Data based on independent laboratory tests and examinations.

IS IT LIVE OR IS IT MEMOREX





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With Radio Shack's new compact disc player, the Realistic® CD-1200, you can start enjoying state-of-the-art stereo sound . . . and preserve the state of your budget.

CD-1200 is Radio Shack's third-generation CD player. With a linear drive system that gives you super-fast access to selections and a tri-spot laser beam that assures precise tracking. You get memory programming of up to 16 selections in any sequence you choose, an easy-to-read information display, plus auto-search music system and a memory-correct button that make operation incredibly easy.

Housed in a beautiful and compact all-metal cabinet (just 27 $\frac{1}{8}$ " high), the CD-1200 is a Radio Shack exclusive. It comes complete with hookup cables and an excellent 16-page owner's manual for only 299.95, or low as \$20 per

month with Radio Shack/CitiLine credit. Come in for a personal demonstration, today.



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The Toshiba CD player and the Kenwood cassette deck on the cover are tested in this issue. Art furniture by Todd Miner/Art et Industrie Ltd.

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COVER: DESIGN BY SUE LLEWELLYN, PHOTO ROBERT LEVIN

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SPEAKING MY PIECE

by William Livingstone



The Llewellyn Look

MAGAZINES exist to communicate information, but the average reader gives little thought to how that information is presented. The content is what you want, and you either find a magazine appealing to read and to look at or you don't. You probably never wonder whether an article was difficult to write or whether the layout of pages resulted from hours of grueling collaborative effort or from an explosion in the printing plant.

Well, wake up out there! Our jobs require talent, training, and hard work, and at times we feel you should pay more attention.

Today I'd like to direct your attention to the work of Art Director Sue Llewellyn, who in one way or another collaborates with every member of the staff in determining how each issue of the magazine looks. "Communication is of paramount importance," says Sue. "In addition to being visually communicative for the sake of the readers, an art director has to be verbally communicative in planning sessions with the editors so that there are no unwelcome surprises when something appears in print."

The editors decide which equipment should be featured on the cover, for example, and the art director must then devise a communicative and attractive way of showing it. "I

like to create a slightly offbeat atmosphere in the photos," Sue explains, "so that the equipment can be shown as sculpture—objects of art—accentuating the aesthetics of the units while their function is discussed in the text.

"When so many units are aluminum or black boxes, it's really a challenge to think of ways to make each issue look different from the others and still create a familiar identity for STEREO REVIEW. Art directors count on typography to give coherence and consistency to the design of a magazine, but I try to do it with the style of photography as well, by the *mood* I create."

Her use of illustrators adds to the effect. David Johnson, who specializes in great literary figures, was her choice to draw portraits of our columnists.

Ms. Llewellyn is from England. She was trained in art and design at the High Wycombe College of Art and Technology and took a bachelor's degree in Visual Communication at Manchester University. In England she designed numerous science textbooks and worked on a wide variety of magazines. Since coming to the United States in 1979, she has divided her time between educational books and such magazines as *Technology*.

When Sue joined the staff of STEREO REVIEW in February 1984, we had begun a redesign (the work of many hands) that she was to adapt. After half a dozen issues and some howls from readers, she was asked to redesign the magazine entirely. The first issue that was completely hers was November 1984.

"I was asked to come up with a clean, airy, consistent, contemporary look that would please the readers," she says. "To that I've tried to add an aspect of elegance. The Assistant Art Director, Margaret Bruen, and I have a lot of fun with some of the work. A magazine can't be fun to read unless the staff has fun putting it together."

This issue, which completes a year of the Llewellyn Look, seems an appropriate place for a salute to Sue. As one of her chief collaborators, I have a biased view, of course, but I think she has made history in hi-fi journalism. Until now it has never looked so good. □

Stereo Review

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One of the most advanced cassette decks in recorded history.

With its advanced technology and features, Yamaha's new K-1020 cassette deck makes most others seem like ancient history.

To begin with, the K-1020 has a specially designed closed-loop dual-capstan transport system. There's one capstan on either side of the record and playback heads. This insures that the tape is always in optimum contact for exceptional frequency response and low wow and flutter. And separate reel and capstan motors insure that the tape drive stays isolated from the reel operation for increased reliability and reduced modulation distortion.

Each of the three heads in the K-1020 is specifically designed to maximize its performance. The pure Sendust record head has a 2-micron gap for precise signal recording. The pure Sendust playback head has a 0.7-micron gap for accurate reproduction as high as 23 kHz. And the double-gap erase head has an ion-plated 0.3-micron glass coating to insure that it erases even difficult metal tape formulations completely.

To set the correct bias for not only different

tape formulations, but each individual tape, the K-1020 has an Optimum Record Bias Tuning system. Just press the TEST button and adjust the bias control until the ORBiT tuning indicator shows you the bias is precisely set. Then to prevent saturation, use the variable O-VU recording level indicators to set the level for each tape formulation/noise reduction combination.

Of course, a deck as advanced as the K-1020 gives you a choice of Dolby* B and C as well as dbx*** noise reduction. Plus full-time Dolby HX Pro* to increase headroom by as much as 8db at 20 kHz. Along with a full complement of convenience features including a four-digit real-time counter with auto memory.

And the K-1020 is just one in a complete line of new Yamaha cassette decks. Because history has a way of repeating itself.

K-1020 shown with Yamaha YHD-1 Orthodynamic Headphones
*Dolby and Dolby HX Pro are trademarks of Dolby Laboratories
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Yamaha Electronics Corporation, USA, P.O. Box 6660, Buena Park, CA 90622



polk audio

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SDA 1
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SDA CRS
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MM II
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MM III
\$57.50 ea

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Matthew Polk's total dedication to a philosophy of uncompromising quality results in dramatically better sounding speakers for you.

"The Genius of Matthew Polk Creates Better Sounding Loudspeakers"

Matthew Polk has combined human creative genius and computer technology to design loudspeakers of unexcelled musical sound quality.

Polk Speakers Sound Better

The ultimate goal of every one of Matthew Polk's loudspeakers is to enable you to achieve better sound in your listening room and to give you the greatest listening pleasure and long term satisfaction from your music and hifi. You will find Grand Prix Award winning state-of-the-art technology in every Polk speaker system from the least to the most expensive. At Polk Audio technology serves music, and you.

"Vastly superior to the competition... Our advice is not to buy speakers till you've heard the Polks."
Musician Magazine

Hear for Yourself Why Polk is #1

Last year, for the second year in a row, Polk Audio was voted #1 in the Audio Video Grand Prix. It was the 4th year in a row that Polk won the Audio Video Grand Prix Speaker of the Year Award. Polk speakers are designed better, built better and sound better! We are The Speaker Specialists.[®] Polk builds a wide variety of different loudspeakers for different needs and budgets; however, their ultimate goal is always your total musical satisfaction. If you're looking for lifelike musical quality, world class technology and unexcelled value, Polk loudspeakers are your obvious choice. You'll always be glad you bought the best.

For Dealer Nearest You Call TOLL-FREE 800-633-2252 Ext. 907

CIRCLE NO. 37 ON READER SERVICE CARD

For your nearest Polk dealer see page 109.

“Polk’s Remarkable Monitors Redefine Incredible Sound/Affordable Price”

“At the price, they’re simply a steal.”

AUDIOGRAM MAGAZINE

A new generation of Polk Monitors is now available which incorporate the same high definition Silver Coil Dome tweeters and Optimized Flux Density drivers developed for the SDAs. Polk Monitor Series loudspeakers have always had a well deserved reputation for offering state-of-the-art performance and technology usually found only in systems which sell for many times their modest cost. In fact, many knowledgeable listeners consider that other than the SDAs, Polk Monitors are the finest imaging speakers in the world, regardless of price. They have been compared in performance with loudspeakers which sell for up to \$10,000 a pair and are absolutely the best sounding loudspeakers for the money available on the market. Now they sound even better than ever.

“Open, uncolored, perfectly imaged sound.”

MUSICIAN MAGAZINE

All the Polk Monitors, regardless of price, offer consistently superb construction and sonic performance. They achieve open, box-less, three dimensional imaging surpassed only by the SDAs. The Monitor’s silky smooth frequency response assures natural, non-fatiguing, easy to listen to sound; while their instantaneous transient response results in music that is crisply reproduced with lifelike clarity and detail. In addition, dynamic bass performance, ultra wide dispersion, high efficiency and high power handling are all much appreciated hallmarks of Monitor Series performance.

Polk’s Uncompromising Standard of Superior Sonic Performance

The consistently superb performance of the Polk Monitors is in large part due to the fact that they all utilize very similar components and design features. However, more importantly, it is the elegant integration of concepts and components which results in the superior sonic performance and value which sets the Monitor Series apart. Audio-gram magazine said, “How does Polk do it? We think it is mostly execution. They hear very well and they care.” Audiogram is absolutely right! At Polk we take the same care with each and every product we build, whether it is our most or least expensive. We lavish the same lengthy amount of critical listening and tuning on every single Polk speaker because we know that having a limited budget does not necessarily indicate that you have a limited ability to appreciate true musical quality. That’s why Polk speakers sound better.



Polk’s remarkable Monitor Series Loudspeakers offer state-of-the-art technology and performance usually found only in systems which sell for many times their modest cost.



Polk dedication to quality is apparent in every detail of design, construction and superior sonic performance.

There’s A Polk Monitor Perfect for You

There are six Polk Monitor Series loudspeakers. As you move up the Monitor Series the speakers get larger, more efficient, handle higher power, have greater dynamic range and better bass response. They are designed so that a smaller Polk played in a small room will sound nearly identical to a larger Polk in a large room. And, of course, a larger Polk in a smaller room will play that much louder and have even better bass. The RTA 12C also incorporates unique technology which results in improved imaging and clarity. Whatever your budget, there is a Polk Monitor which is perfect to fulfill your sonic dreams at a price you can afford.

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The Speaker Specialists®

polk audio



SDA SRS
\$1295.00 ea

Matthew Polk's remarkable new SDA-SRS was selected for the prestigious 1985 CES Design and Engineering Exhibition.

“The Genius of Matthew Polk Redefines State-of-the-Art”

For the last 4 years Matthew Polk has been driven by an all consuming passion: to develop the ultimate SDA loudspeaker. He has succeeded.

Matthew Polk's Ultimate SDA

The extraordinary new SDA Signature Reference System combines Polk's patented SDA TRUE STEREO Technology* with phase-coherent vertical line-source topology. The result is a high efficiency, low coloration system of awesome and seemingly limitless dynamic range and bass capabilities. It reproduces music with a precisely detailed and life-like 3-dimensional soundstage which is unequalled.

Introducing the
Phase-Coherent
Line-Source
SDA-SRS

The Best SDAs yet...
impressive and worthy of
Matt Polk's signature.

High Fidelity Magazine

The SDA Signature Reference System's State-of-the-Art Performance Features

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- Effective Bass Radiating Area Equivalent to a 40" Woofer
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- Progressive Point-Source Tweeter Array
- Full System Complement Sub-Bass Drive
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- 1000 Watt/Channel Power Handling
- Non-Resonant Monocoque Cabinet

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“Polk’s Revolutionary TRUE STEREO SDAs Always Sound Better Than Conventional Speakers”

“They truly represent a breakthrough”
ROLLING STONE 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 4 uniquely superb loudspeaker systems, the SDA-1A, SDA-2, SDA CRS and the incredible new SDA SRS.

Polk’s Revolutionary SDAs: The First TRUE STEREO Speakers

The design principles 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? It’s quite simple. The fundamental and basic concept of mono is that you have one signal (and speaker) meant to be heard by both ears at once. However, the fundamental 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



Polk’s revolutionary TRUE STEREO SDA Loudspeakers fully realize the astonishingly lifelike, three dimensional imaging capabilities of the stereophonic sound medium.

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 the stereophonic sound medium.

“A new dimension in the sound.”
STEREO REVIEW MAGAZINE

Words alone cannot fully describe how much more lifelike TRUE STEREO reproduction is. Reviewers, critical listeners and novices alike are usually overwhelmed by the magnitude of the sonic improvement achieved by Polk’s Stereo/Dimensional Technology. You will hear a huge sound stage which extends not only beyond the speakers, but beyond the walls of your listening room itself. The lifelike ambience revealed by the SDAs makes it sound as though you have

been transported 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. 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.”

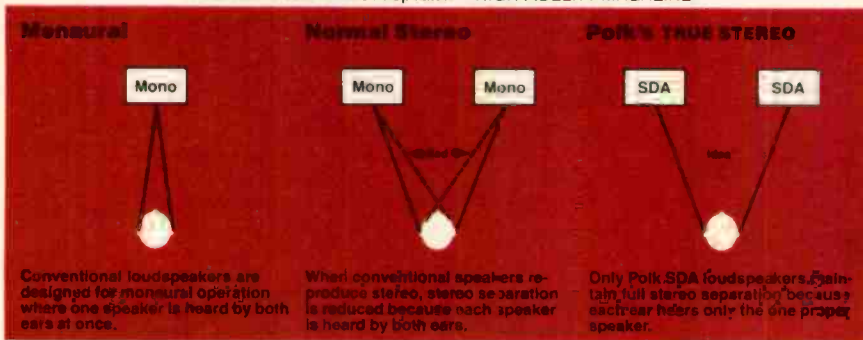
The experts agree: Polk speakers sound better. Hear them for yourself!

polk audio

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*U.S. Patent No. 4,489,432. Other patents pending. U.S. & Foreign.

“Polk Reinvents the Loudspeaker” *HIGH FIDELITY MAGAZINE*



CD: More Pro, More Con

I've been amused by the tightrope STEREO REVIEW has walked in the issue of CD's vs. LP's, but Ralph Hodges's "High End" column in August was beyond the pale.

To anyone who's heard Telarc's marvelous CD of the Berlioz Requiem, the question is, why buy a \$10,000 turntable? And if you're making that turntable, the answer is frightening! If you want that un-antiseptic sound, buy one of the wonderful Reiner/Chicago CD reissues. They have just enough tape hiss to make any "high-ender" happy. But then, I'm just a "mid-fi," tin-eared musician for whom 20 to 20,000 Hz with unmeasurable wow-and-flutter and a 90-dB signal-to-noise ratio are enough.

Besides, if the analog manufacturers go out of business, we might have to pay 'em welfare.

CARL BALDUF
Ypsilanti, MI

I just finished reading Ralph Hodges's excellent column in August on "Roger Lagadec and the Great Digital

Debate." I find it amusing that someone like Lagadec, who is actively involved in furthering the interests of digital audio, knows well the advantages and disadvantages of the Compact Disc—and is honest enough to admit (1) that, contrary to Julian Hirsch, all Compact Disc players *don't* sound the same, (2) that the CD as it is now is only mid-fi (he's being generous; I still call it low-fi), and (3) that the better LP's are closer to the real thing than the better CD's are.

Quite frankly, I don't care what the technical reasons are (too sharp a roll-off, not enough bits, etc.), because it is probably a combination of factors. All I know is that the one medium is musical, the other is not—perhaps because my ears and brain work in the analog mode and not the digital mode.

GARY A. CRIGHTON
Los Angeles, CA

We read with great interest "The High End" in the August issue. As a result, we have decided to form a new company to produce high-end audio equipment to satisfy those audiophiles dismayed by the lifeless sound of digital

audio. Our products will use Digitally Induced Reactionary Technology (DIRT) to resurrect those "microbes" of organic sound that are lost during the "antiseptic" digital encoding process. We are also planning to market a line of rim-drive turntables. We believe that no one should be deprived of the undeniably "human experience" of rumble, wow, and flutter.

RUSINSKI, RACZYNSKI, AND RHOADS
Dinosaur Audio, Inc.
Rome, NY

Ergonomics

In the test report on the Revox B285 receiver in the August issue, the word "ergonomic" is used in relation to the design of the receiver. What does "ergonomic" mean? I am unable to locate this word in any dictionary.

DALE BRIGHTWELL
Pomona, CA

"Ergonomics" ("*ergonomic*" is the adjectival form) is a relatively recent word not found in many dictionaries. The Random House dictionary defines it as "biotechnology," but the more usual

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Ortofon	x906		

Stereo Review

NO OTHER HIGH-BIAS CASSETTE CAN MATCH THESE NUMBERS:

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Other Type II (high-bias) cassettes are a long way from home when it comes to reproducing the pure, dynamic sounds of digitally encoded music sources.

But, number for number, TDK HX-S audio cassettes are number one.

Their exclusive metal particle formulation reproduces a wider dynamic range and higher frequency response. This enables HX-S to capture all the crispness and purity of digital performance on any cassette deck with a Type II (high-bias) switch.

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Additionally, HX-S excels in retention of high frequency MOL, which no other high-bias formulation attains.

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For optimum results with Type II (high-bias) and digitally-sourced recordings, get TDK HX-S. You'll feel more at home with it, wherever you go.

TDK
THE MACHINE FOR YOUR MACHINE.®

meaning today is "human engineering," the technology of making products easier, safer, and more comfortable to use.

Troubleshooting

A point to add to Ian Masters's August article on "Troubleshooting" a home hi-fi system: One of the most common reasons signals are lost between components is that ubiquitous dismal critter, the "phono plug," "pin plug," or "RCA plug." These sheet-metal disasters have a habit of losing their grip, and it is a good idea to bend opposite "petals" gently toward the center with your fingers or a pair of pliers. When inserting the plug, if you can feel both the pin and the petals take hold, you have a good connection.

The female connector, that is, the jack (perhaps it should be called the "jill"), can be cleaned with a pencil eraser. For a more professional approach, I use Polysand 6000 to polish these and other connectors. This is a 6000-grit fabric, much finer than any grade of sandpaper, that removes oxides without removing the parent metal. It will not harm adjacent plastics either. I buy

Polysand 6000 from Audio Accessories, 4 Mill St., Marlow, NH 03456.

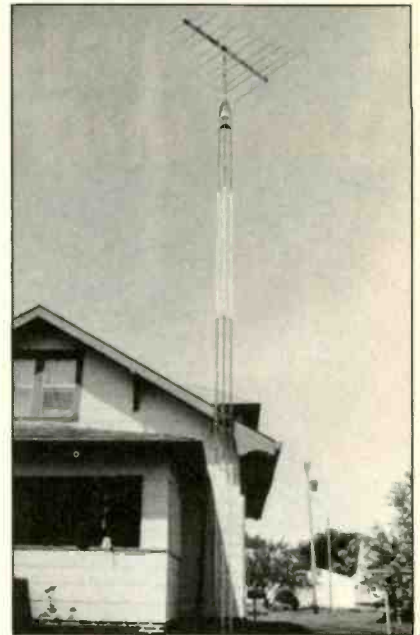
RANDALL KEILS
Kalamazoo, MI

In the article on "Troubleshooting," Ian Masters says that "A small spirit level placed on a record on the turntable will indicate whether or not it is truly horizontal . . .," but the accompanying illustration shows a level placed well past the center of the turntable. The level should be placed as close to the center of the platter as possible, because the weight of the level itself can tilt the turntable.

M. A. STEPHENSON
Richmond, VA

Antenna Upgrade

I really enjoyed Julian Hirsch's May article on antennas. This letter is a little late because I've just finished installing my antenna system, a photo of which is enclosed. The improvement in dynamic range, elimination of multipath, and lack of noise are dramatic. I have pulled in stations more than 350 miles away. The tower is 50 feet tall, with a Channel



Master antenna on top and a CDE Ham II rotor to position it.

I feel that this is the single most

*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.*



rewarding component I have added to my audio system. Thank you!

RON BURCH
Bushion, KS

Westward Ho!

In the July issue's "Best of the Month" section, conductor Riccardo Chailly is shown, arms flailing, in an Izod shirt. Though no fashion connoisseur, I *am* a journalist, and I was disheartened to find that photographer Mike Evans's shot had been conveniently reversed so that Chailly faced the inside of the page. I've never seen a west-bound alligator on an Izod shirt before. Graphically speaking, it was a nice move, but it raises a few ethical questions. The flopped photo made me wonder whether Chailly was really standing in front of the Berlin Radio Symphony (with which he recorded the album under review) or even in front of an orchestra at all.

GRANT RAMPY
Nashville, TN

We printed the photo as we received it from London Records.

Art Rock

I read with considerable interest your article on "Rock Gender Benders" a few issues back and must say that I heartily enjoyed it. However, what I would really like to see is a comprehensive article on "art rock" featuring the Mothers of Invention/Frank Zappa, Roxy Music, Brian Eno, 10cc, Godley/Creme, Siouxi and the Banshees, et al. And an article on humor in rock-and-roll would also be welcome. Might I suggest Root Boy Slim and the Sex Change Band and the Rhino Records catalog for starters?

STEVEN COLLINS FORD
Chatham, NJ

Style and Content

I want to express my satisfaction with your test report in April on the Hitachi VT-88A VHS Hi-Fi VCR. I think it is a super-detailed job by the Hirsch-Houck Labs, and a lot of video enthusiasts like me will probably buy the unit sooner or later as a result.

As reader Jeffrey B. Healey said in the same issue's "Letters" column, "STEREO REVIEW now has the contemporary

look of the Eighties," but it also has the steady depth that counts in every monthly issue.

ALEX CAMPOS
Caguas, PR

Responsible Journalism

Julian Hirsch's review of the Technics SL-P3 Compact Disc player in June says good things about his reviewing. He presents pertinent data regarding performance and user relevance. But his interpretation of the information shines forcefully as an example of apt perception and communication. It feels good to be in the company of responsible journalists such as Mr. Hirsch.

CARLOS E. BAUZA
San Juan, PR

Correction

The address given in the September test report on the KEF 104.2 speaker system is now incorrect. The company has recently moved, and the new address is: KEF Electronics Ltd., Dept. SR, 14120-K Sullyfield Circle, Chantilly, VA 22021.

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.

The KRC-838. Designed by Kenwood to enhance the finer moments in your life.

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Marlboro Red or Longhorn 100's—
you get a lot to like.

16 mg "tar," 1.0 mg nicotine av. per cigarette, FTC Report Feb '85

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NEW PRODUCTS



Pioneer

The VHS Hi-Fi VH-600, the first video-cassette recorder from Pioneer, can be used for recording simulcasts or as an audio-only recorder. A Multichannel TV Sound (MTS) output jack allows the use of a separate decoder for receiving stereo TV sound. The VH-600 can be programmed for four events over two weeks. The cable-ready tuner can handle 107 stations. Special effects include high-speed search and freeze-frame. A wireless remote control is supplied. Price: \$899.95. Pioneer Electronics USA, Dept. SR, P.O. Box 1720, Long Beach, CA 90801.

Circle 120 on reader service card

Akai

Akai's direct-drive closed-loop GX-9 cassette deck has three heads to enable a user to monitor recordings while they are being made. The Super GX heads are composed of glass and ferrite crystal. The deck automatically selects the correct bias and equalization for different tape types. The bias adjustment can also be fine-tuned by the user. The four-motor transport has a dual-capstan drive that is said to lower wow-and-flutter to 0.025 percent. Transport controls allow automatic play after rewinding a tape or scanning the recorded tracks. The counter can indicate elapsed or remaining time, and the deck can be set either to stop automatically or to begin play after the tape fast-winds to a preset location.

Other features include an output level control, a headphone jack, and record



mute. The signal-to-noise ratio with metal tape is rated at 80 dB with Dolby C, 70 dB with Dolby B, 60 dB with no noise reduction. Frequency response is given as 20 to 19,000 Hz ± 3 dB with normal (ferric) tape. Frequency re-

sponse is said to extend to 20,000 Hz with high-bias tape and to 21,000 Hz with metal tape. Price: \$500. Akai America, Dept. SR, 800 W. Artesia Blvd., Compton, CA 90224.

Circle 121 on reader service card



dbx

The dbx Soundfield Ten speaker system uses two 10-inch cone woofers, two 4-inch cone midranges, and four $\frac{1}{2}$ -inch dome tweeters in each unit to create realistic stereo imaging at all locations in the listening room. Like dbx's larger Soundfield One speakers, the Tens are designed to produce oval radiation patterns with the greatest amplitudes directed between the speakers. The result is that both speakers sound equally loud even when the listener is much closer to one of them. The directional output is consistent from 200 to 20,000 Hz, the lower frequencies being omnidirectional by nature.

An outboard controller, which connects in the tape-monitor loop of a receiver or preamplifier, provides frequency and ambience adjustment, in-

cluding low- and high-frequency contouring. An equalization switch compensates for the effects of placing the floor-standing speakers against a wall. To change the spaciousness of the image, the ambience control varies the proportions of the L + R and L - R signals.

Frequency response is given as 30 to 20,000 Hz ± 2.5 dB, dynamic range as 98 dB, and impedance as 4 ohms. Mid-band sensitivity in a typical room is rated as 90 dB sound-pressure level at 1 meter with an input of 2.83 volts. The speakers are recommended for use with amplifiers whose output is between 40 and 300 watts per channel. Price: \$1,250 per pair (with controller). dbx, Dept. SR, 71 Chapel St., Newton, MA 02195.

Circle 122 on reader service card

NEW PRODUCTS

Magnavox

Three new Compact Disc players from Magnavox use a four-times digital oversampling rate instead of steep analog filters to reduce spurious ultrasonic frequencies. The FD1041BK and FD2041SL (shown) can be programmed to play up to twenty tracks and have three-speed search with the program audible. Other controls enable skipping to the start of the next or the previous track, and the players can be programmed to omit unwanted tracks. The FD2041SL measures 16½ inches wide, the FD1041BK 12½ inches; height for both is 3½ inches, depth 11¾ inches. Price: \$299 for either model.

In addition to the same operating features as the other two models, the



FD1051BK has an eight-function infrared remote control and a digital read-out. Its dimensions are the same as those of the FD1041BK. Price: \$349.

Magnavox, Dept. SR, North American Philips, P.O. Box 6950, Knoxville, TN 37914.

Circle 123 on reader service card



ADS

The ADS Atelier CD3 Compact Disc player has individual 16-bit digital-to-analog converters for each channel, double oversampling, and digital "brick-wall" filtering combined with phase-corrected analog filters. The error-correction system varies its opera-

tion to keep data interpolation to a minimum. Mechanical and acoustic feedback are said to be minimized by mounting the laser transport assembly on a massive cast-alloy subchassis.

The front panel has controls for start, pause, fast forward, fast reverse, skip

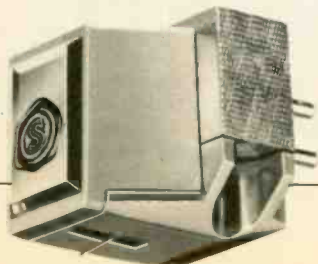
forward, skip back, and stop. A flip-down panel contains the programming controls. LED displays show the track number and elapsed or remaining time. The line and headphone outputs are both variable. The optional RC1 wireless remote control can access up to ninety-nine tracks, and it can program up to thirty of them for playback in any order. The RC1 will be usable with other forthcoming ADS components besides the CD3. Prices: CD3, \$895; RC1, \$99. ADS, Dept. SR, One Progress Way, Wilmington, MA 01887.

Circle 124 on reader service card

Signet

The Signet MK440ml Dual Moving MicroCoil phono cartridge has a Micro-Line stylus tip, which is said to offer the least horizontal contact and the greatest vertical contact with the record groove of any stylus shape. The cantilever is beryllium with a thin, vacuum-applied gold plating, which is claimed to damp out unwanted resonances without adding significantly to the moving mass. Rare-earth samarium-cobalt magnets are used, and the dual coils are wound with ultra-low-loss, oxygen-free copper wire. Frequency response is given as 5 to 50,000 Hz (no tolerance stated). Price: around \$600. Signet, Dept. SR, 4701 Hudson Dr., Stow, OH 44224.

Circle 125 on reader service card



Audio-Technica

Audio-Technica's AT-CD10 Compact Disc player uses a three-beam laser and double-resolution digital filtering. The resampling rate of 88.2 kHz is said to decrease phase shift, noise, and distortion. A multifunction indicator displays the total number of tracks, the current track number, and elapsed time in the current track. Up to nine tracks can be programmed for playback in any order, a repeat function allows continuous replay, and selections can be scanned slowly, with the program audi-

ble, or as fast as sixty times normal speed. Access controls include skip forward, skip back, fast forward, and fast reverse. In the stop mode, the fast-forward and reverse buttons access encoded index points. The AT-CD10 automatically inserts 3 seconds of silence between selections during playback. An independent headphone volume control is included. Price: \$399.95. Audio-Technica U.S., Dept. SR, 1221 Commerce Dr., Stow, OH 44224.

Circle 126 on reader service card



Why didn't they sound like that in the showroom?

The effects of environment on speaker performance.

by John Carter

Chief Engineer



As an experienced audio enthusiast, you've spent numerous hours in hi-fi dealerships listening to speakers. But when someone asks "Which speakers sound best?" you're not always sure what to say. You have an opinion, but you know that speakers don't sound the same at home as they do in the showroom.

Two key factors contribute to this variation—room acoustics and speaker placement. As the accompanying graph shows, different environments significantly vary the frequency response of a speaker system. The largest variance typically occurs in the mid-bass region, as evident on the graph by the large discrepancy in response between 70 Hz and 200 Hz. This discrepancy is a direct result of the placement of the speaker relative to the wall behind it.

Variations in frequency response, combined with other complications, present a formidable problem to the speaker buyer. The logical question to ask is "What can be done to help simplify speaker evaluation in a showroom?"

To simplify evaluation, you must first limit the conditions under which speakers are compared. Have speakers which interest you placed in the same relative location you'll use at home. There's no sense auditioning a speaker on a showroom shelf if it's going to be used on your living room floor. Also, compare speakers at the same relative volume level. Otherwise, the louder (more efficient) speaker will sound better, even if it isn't. Finally,

set the tone controls on the demonstration amplifier to neutral. This will provide you with your most accurate comparison.

Once the conditions are set, you can begin to evaluate speakers. But as we've already seen, frequency response, a crite-

constant. Since FM noise covers a wide bandwidth, you can make a general determination of the sound distribution, without worrying about the effect of the showroom on a particular frequency.

3. Lifelike Spaciousness. This is not quite as subjective a judgment as it seems, if you make the evaluation with your eyes closed. While you'll be able to localize various instruments, a good system will make it hard for you to localize the enclosures. The music should seem to originate from an imaginary stage, much larger than the enclosures themselves.

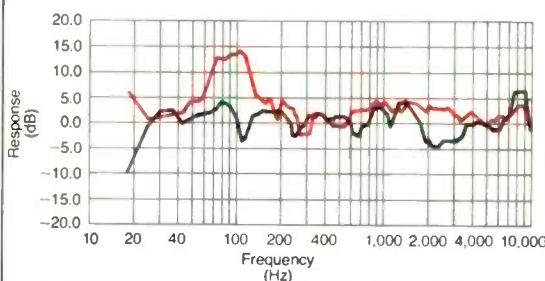
All Bose® Direct/Reflecting® speaker systems are designed to meet these criteria. But since the criteria are derived from live performance, you can use them to evaluate

any speakers. They'll help you select a system which delivers solid performance in the home, not just in the showroom.

For more information on Bose products and a list of authorized dealers, write: Dept SR, Bose Corporation, The Mountain, Framingham, MA 01701.

John Carter holds an M.S. in Electrical Engineering from M.I.T.

The Effects of Environment on Frequency Response



The two curves show the frequency response of the same speaker system in two different rooms. Key reasons for variations in response are room acoustics and speaker placement.

rior often used for evaluation, varies too widely from room to room to provide adequate information for comparison. This emphasizes the need for a set of audible criteria which indicate desired speaker performance, yet remain relatively constant between the showroom and the home. At Bose, we invested many years researching live performance, and as a result, have developed such a set of criteria:

1. Stereo Throughout The Listening Room. To test for this, stand in front of one enclosure, and try listening to the other one. If you only hear one speaker in the showroom, you'll probably only hear one at home.

2. Even Sound Distribution. To test for this, listen to interstation FM noise over a pair of speakers, and walk around the room. The level of noise should remain



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CRUTCHFIELD

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by Larry Klein



Brighter Displays

Q About three years ago I bought a receiver with a fluorescent display. Last year I purchased a cassette deck and noticed that its display was brighter than the receiver's. I recently bought a graphic equalizer with a real-time analyzer and found that its display is brighter than either of my two older units'. Do fluorescent displays lose their brightness with age, or have the displays been getting better and brighter with advances in technology?

JOSEPH A. SABAT
Cincinnati, OH

A What we are dealing with here falls more into the realm of aesthetics than electronics. Although fluorescent displays, like fluorescent lights, may dim with age, I would expect an audio component to be well into obsolescence before its display dims significantly.

Several years ago an importer told me that Japanese manufacturers had discovered that their home-market audiophiles seemed to prefer brighter readout displays than their overseas customers. A few companies have made equipment with high/low brightness switches for the display, but I would guess that most manufacturers determine how bright their displays will be on the dual basis of personal taste and the voltages available to drive the displays.

Shortwave Loss

Q Why has the shortwave band been so successfully excoriated out of the common tuner? Are we too ignorant, or just too cheap, to pay for extended reception capabilities?

STEVEN FRANKL
Flushing, NY

A At one time a few European-made tuners and receivers had provisions for shortwave reception, but only because there was (and is) a reasonable selection of interesting foreign stations that could be received clearly in their home markets without the need for long-wire outdoor antennas. In the U.S. and Japan, most of us have neither the proximity to the foreign stations nor sufficient interest in receiving them to encourage manufacturers to include shortwave tuning ability in most tuners or receivers.

There are technical factors involved also. The one-chip AM sections found in most of today's receivers are not adaptable for good shortwave reception. Anyone interested in listening to shortwave should look for one of the very sophisticated digital-synthesis shortwave receivers made by Panasonic, Sony, Kenwood, and others. These units were designed from the start for "extended reception capabilities" on the shortwave bands, and they will far outperform receivers or tuners that have shortwave facilities added as an afterthought.

Video Stereo Simulator

Q More and more music videos and concerts are now being shown on cable. How does a stereo-simulator accessory connected to a VCR or TV set compare with the stereo signal provided by the cable companies?

MARK KERTZNER
Hollywood, FL

A In a word, poorly. Studio mono-to-stereo simulators usually operate by using an intermeshed "comb-filter" arrangement. (A comb filter passes frequencies in alternate bands with dips between them. The frequency-response curve of the filter resembles the teeth of a comb, hence the name.) The mono signal is split into two channels, each of which is fed into one channel of a stereo equalizer. The equalizer controls for each channel are set in opposite directions. The left channel might be boosted at, say, 32, 125, 500, 2,000 Hz, and so on, while the right channel is boosted at 64, 250, 1,000, 4,000 Hz, and so on. The ear tends to interpret the double comb-filter effect as stereo.

The one-third-octave equalizers commonly used in studio^o create a better illusion than the octave-band equalizers found in the home. And many studio units tinker with the phase relationships between the two synthesized channels to enhance the stereo illusion further. Cheap and dirty stereo simulators usually put all the treble in one channel, the midrange and bass in the other. Or they might act as a three-tooth comb filter by sending the midrange to one

"Frighteningly close to perfect"



ADS



OPTIONAL RC1
REMOTE CONTROL UNIT

The Atelier CD3 Compact Disc player is the newest example of the ADS philosophy:

Never rush to market with a "me too" product.

Take the time and trouble to design an original.

We did.

We used 16-bit digital to analog converters for each channel and two-times oversampling to insure exceptional accuracy, low distortion, and outstanding signal-to-noise ratios.

We developed digital/analog filtering that not only eliminates sampling and conversion noise but allows less than 2 degrees of phase shift from 20-20kHz.

We designed an advanced error correction system with a unique variable correction window. This system focuses only on the data in error and eliminates unnecessary large-scale correction of the music signal.

The resulting sound of the CD3 is smooth and clear, free from the shrillness often associated with less advanced CD players. Frequency response, as *Digital Audio* described it, is "frighteningly close to perfect."

Of course, the CD3 shares the rational, uncluttered design of other Atelier components. Front panel controls are simple and logical. More complex functions, such as indexing, time and track display, toggling and 30 selection programming are hidden on a push-to-release pivoting panel.

An optional remote control unit, the RC1, is available for the CD3. It has the capability to control all future Atelier components.

The CD3 is now at your local ADS dealer. Listen to one, touch one, see how close to perfect a CD player can be.

For more information or the location of your nearest ADS dealer, call 800-824-7888 (in CA 800-852-7777) or write to ADS, 416 Progress Way, Wilmington, MA 01887.

The new ADS CD3.



channel and the bass and treble to the other.

At present, many cable companies are transmitting stereo, if they're transmitting it at all, using blank spots on the standard FM band sent through the cable. Ideally, cable stereo should use the same technology as stereo sound TV, which would simplify matters for consumers who have stereo-sound VCR's and television receivers. To use that technology, however, the cable companies would have to replace all their home cable converters, which is an expense they would rather avoid.

Cassette Head Alignment

Q How do cassette-deck manufacturers align the heads on their machines? Is it done automatically or by hand? And how can I align mine properly without fancy test equipment?

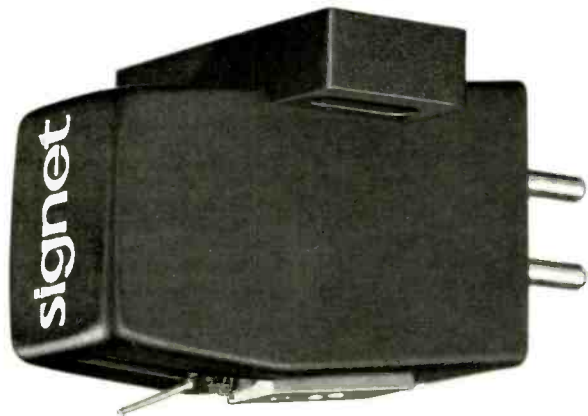
DOUG FALKINER
Anaheim, CA

A A number of the tape companies produce expensive, limited-edition alignment tapes made on machines with ultra-precise azimuth adjustments. These tapes, or the equivalents, are used

by manufacturers to adjust their machines. However, alignment is no job for a novice. The arrangement of the mechanical adjustment screws used to position the heads or head assembly of any particular machine is likely to differ from model to model, so you would need not only an expensive test tape but also the service notes for your particular unit, and possibly an expensive millivoltmeter to monitor the procedure.

The simplest way to check the alignment of your machine is with a good prerecorded wide-range audiophile music cassette and a high-quality LP made from the same master tape. Since alignment, or lack of it, affects high-frequency reproduction, listen to the highs on the tape and compare them with those on the record. The relative level of the highs on the cassette should be very close to that on the LP.

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Until you hear the Signet TK10ML, you may not fully appreciate how superb today's analog recordings can be. And how much may be lost by going all-digital.

The single most significant advance in the Signet TK10ML is its unique new *MicroLine*™ stylus... with the longest, narrowest "footprint" ever achieved! Its scanning radius is a mere 2.5 microns, half that of the best ellipticals, while its vertical contact footprint is three times longer than the elliptical. The Signet *MicroLine* stylus tracks very high frequencies better—at lower groove pressure—than any other design.

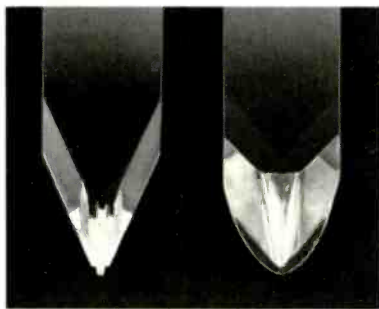
Even with repeated playings, the *MicroLine* stylus maintains its shape, without "spreading" like all other tips.

So grooves sound new, long after other styli are threatening irreparable damage to your record collection.

Each Signet TK10ML *MicroLine* stylus is created from a whole, natural octahedral diamond, oriented for longest life, and with a square shank to precisely fit the laser-cut hole in our unique, ultra-rigid low-mass boron cantilever. You get perfect alignment. Period.

But the proof of quality is in the playing. With the new Signet TK10ML, older records literally come back to life. New records transcend the limits of ordinary technology. Your entire system gets a new lease on life.

Visit your Signet dealer. Peek into his microscope to see this fantastic stylus. Then get the real proof. Listen.



signet

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CIRCLE NO. 1 ON READER SERVICE CARD

Stereo Wide

Q I'm curious about a switch commonly found in today's portable stereo "boom boxes." It is called "ambience" or "stereo wide." How is this effect accomplished? Is it a time delay or some kind of equalization?

ROB ALEXANDER
Woodbury, MN

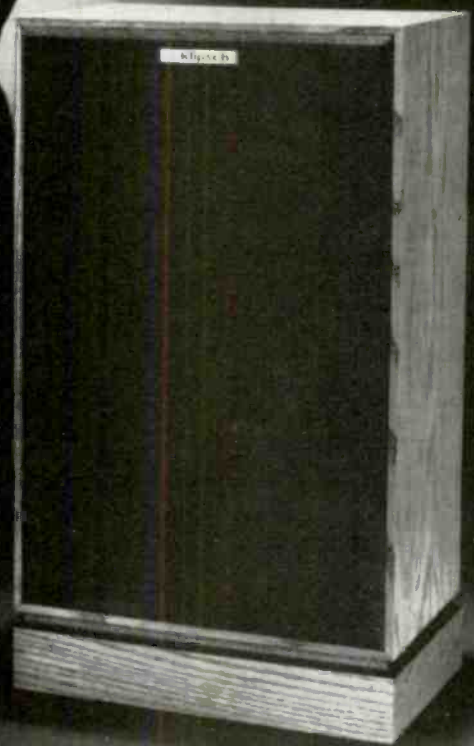
A A stereo signal conventionally consists of a right channel and a left channel. The difference between the signals in the two channels is known, logically enough, as the "difference" signal. By electrically manipulating the relative phases of the main and difference signals, it is possible to achieve an emphasis of the difference between the channels—which is heard as a widening of the sound stage. Incidentally, this has nothing to do with conventional stereo-separation specifications, except that if separation isn't adequate to start with, there is less of a difference signal to manipulate.

Speaker Construction

Q I would like to build speaker systems as a hobby, but the more I read, the more confusing and complex the process seems to become. What books or articles would you recommend for speaker-building advice?

ROSS HIMES
Valparaiso, IN

A Since speaker-system design necessarily involves electronics, physics, acoustics, and psychoacoustics, the process can intimidate someone just getting into it. One handy source for the kind of information you want is a ninety-page paperback book by David B. Weems, *Designing, Building, and Testing Your Own Speaker System*. The second edition is available for \$9.95 postpaid from the publisher, Tab Books, Inc. (Blue Ridge Summit, PA 17214) or at many large bookstores and electronic-parts suppliers. (Tab has a free catalog describing over 750 titles, including



The New KLIPSCH kg⁴, Unconventional Thinking At Its Best

It's never been the habit of anyone at KLIPSCH® to be *conventional*. Take, for example, the pillar of the organization, Paul Klipsch. How many 80-year-olds swim in the buff everyday? Or keep two grand pianos in their living room?

Then there's Gary Gillum, one of the design engineers. He drives an immaculate BMW 528i, grows his own vegetables, and lives in a log cabin. Not just any log cabin mind you, but quite an elaborate one he built himself from trees he cleared off his land.

The people of KLIPSCH have never professed to be conventional. Or create speakers that are. The new KLIPSCH kg⁴, pictured above, is Gary's latest creation and serves as an excellent example.

Consider the KLIPSCH designed

tweeter. Good, conventional tweeters may deliver similar bandwidth and smoothness. But nowhere near the detail or dynamic range that so well characterize the KLIPSCH "sound."

Then there are the woofers. It's not conventional to put two in one speaker. Yet, Gary found that two 8" (20 cm) drivers operating in unison sound musically superior to one larger driver in the kg⁴ cabinet. And don't require as much room.

Finally, there's the passive radiator for low bass. Conventional thinking would mount it on the front of the cabinet. KLIPSCH mounted it on the rear. Measurements and listening tests proved it didn't matter. And with it on the rear, the kg⁴ delivers a big sound without a big cabinet.

All of this unconventional thinking results in a speaker which *Stereo Review*

describes as "truly excellent." And one you can likely afford.

Of course, a visit to your nearest KLIPSCH dealer would be a most conventional way to hear the new kg⁴. But since you would be in the pursuit of sonic excellence, the people of KLIPSCH would likely forgive your behavior.

For your nearest authorized dealer, look in the Yellow Pages or call toll free 1-800-223-3527.



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CIRCLE NO. 2 ON READER SERVICE CARD

two other speaker books by Weems and many worthwhile works on other audio topics.) An excellent magazine for the dedicated speaker hobbyist, *Speaker Builder*, has been published quarterly since 1980 (P.O. Box 494, Peterborough, NH 03458-0494).

Cassette Mistracking

Q I've had an unusual problem with my tape decks. About two years ago I bought a mid-priced deck. When I would dub records with it everything seemed to be working properly, but about 70 percent of the time the tapes would sound in playback almost as though the record were mistracking. I tried different tapes and had the deck in the shop a couple of times, but they could never find anything wrong. I finally offered to sell the deck to a friend, telling him that if he had any trouble I would take it back. He said it sounded great.

I then bought an expensive three-head deck thinking that it would solve my problem—but it was no better. I found that if I had the monitor switch set to SOURCE when recording, everything sounded fine; if I set it to TAPE I would hear the mistracking effect. I also noticed that it was worse at the beginnings of albums, where the warpage was most evident, although when listened to directly the records sounded fine. Some-

how I finally managed to cure the problem by increasing the tracking force on my tone arm from 1½ to 2 grams. Do you have an explanation for all this?

TOM ROHDE
Brunswick, OH

A The problem, as you seem to have discovered, originated in your record player rather than your recorder. The mass of the tone arm and the compliance of the cartridge probably caused the tone-arm/cartridge combination to resonate at a low enough frequency—6 to 10 Hz, say—to respond enthusiastically to record warps. The warps were not bad enough to cause mistracking or groove jumping, but they did jiggle your tone arm sufficiently to produce strong very-low-frequency (infrasonic) transients. The transients were too low in frequency to be heard, or reproduced by your system, but their energy was sufficient to overload the record circuits of your tape deck. Raising the tracking force stabilized your tone arm to the degree that infrasonic transients were no longer produced or were significantly reduced in strength.

Rather than track at 2 grams, however, I suggest that you use a cartridge whose compliance is more appropriate for your tone arm or else install an infrasonic filter between your tape-output jacks and your recorder.

Open-Reel Cassettes

Q Many of the ads for cassette decks show them with cassettes that seem to have miniature open reels. I've never seen ads for the cassettes or information about buying them. What's the story on these professional-looking tapes?

WAYNE PERRY
Columbus, OH

A My copy of the 1985 Japanese *Stereo Guide* shows several Teac cassette tapes with what appear to be miniature flanged reels inside them in place of the conventional hubs. And I understand there is another recently available brand that actually encourages the user to remove the "reels" for editing purposes. All this strikes me as silliness meant to appeal to those more concerned with appearance than performance. The miniature internal reels are likely to inhibit rather than enhance smooth tape flow, and the thought of physically editing cassette tape makes me shudder. (I did it once in an effort to salvage an important speech recorded on a C-90 that had subsequently tangled and shredded itself on the capstan of the transcribing machine.) Anyone interested in editing tapes who can't afford a digital recorder and editor had best stick to old-fashioned open-reel decks, recording in one direction only.

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by Chris Albertson



How to Get Started

My inability to resist electronic gadgets is not a weakness I can easily hide. One quick peek at the six computers in my computerium is enough to convince anyone of the severity of my case. I had a Bang and Olufsen wire recorder in the late Forties, when most people did not know that such things existed, and I was equally ahead of the game when I used my first videocassette recorder (VCR) to capture the Watergate hearings two and a half decades later. Not surprisingly, I am frequently asked for advice when friends—or friends of friends—decide to purchase their first VCR's.

The first thing I tell them is that I am not Julian Hirsch. I cannot explain the significance, if any, of a machine's having $\pm 0.0045\%$ CCIR-weighted flutter in normal mode, nor can I tell them how many parts control the head drum and capstan of a specific model. My advice is generally based on more mundane considerations, and it boils down to getting the best value by shopping wisely and not paying for unneeded features.

While the Philips Compact Cassette established a standard format

for audio tape, the video industry has seen an ongoing battle between two incompatible systems, Beta and VHS. To compound the confusion, Sony not only recently enhanced the Beta format but also, along with Kodak, Pioneer, and several others, introduced a new one using 8mm tape. With three VCR formats—Beta, VHS, and 8mm—vying for the home consumer market, your first decision has to be: which one do I go with?

The new 8mm format has some advantages, not the least of which is compactness; the recorder can easily fit into a lightweight hand-held camera. However, there is as yet little or no prerecorded software in this format, so, at least for now, it is strictly for people who want to make their own tapes. If, like most people, you want a machine primarily for recording programs off the air or cable, or to play back rented or purchased tapes, your choice thus narrows down to Beta or VHS. Each format has its advantages and disadvantages, but, although they are mutually incompatible, their overall quality and features are essentially the same. My recommendation, therefore, is that you ask around and go with the format used by most of your friends. That way you can avoid the frustration of not being able to exchange tapes with them.

Apropos frustration, though, you will find a good measure of it when you finally get to the point of purchase and stand face to face with the video sales clerk, a special breed that, like the computer salesman, traces its ancestral roots to the used-car field. I speak here not of the respectable list-price outlets—to which I send only people of substantial means—but rather of the discount merchants. Never approach a cut-rate video store without first doing some homework:

1. Determine the price range that suits your budget.
2. Find a handful of models within that range.
3. Check out the available features, learn what they offer, and decide which ones you really need.

Features vary from machine to machine, so you should look for a model that combines the ones that

best suit your needs. Learn a few facts about VCR's, even technical ones, and test the salesperson's knowledge by asking questions to which you know the answers. Most sales clerks will pretend to know more than they actually do. Their only interest is to make a sale, preferably one that will please their boss, and if they sense the slightest ignorance on your part, they will go to town.

Bearing this tendency in mind, I decided to visit some of the more popular discount stores in the New York area in the guise of an uninformed customer searching for his first VCR. After all, it had been three years since I last shopped for one, and things just might have changed. Sad to say, they had not.

At each of the three stores I visited, my intelligence was quickly insulted by a sales clerk who thought he "saw me coming," as the

Ask around and go with the format used by most of your friends. That way you can avoid the frustration of not being able to exchange tapes with them.

saying goes. In all three cases, it seemed evident that he was under orders to push certain models, presumably because they were about to become old hat or because they were moving too slowly for management's comfort. When I failed to show interest in these very special "bargains," I was invariably told that the salesman just happened to have this very machine in his own home and that it was really terrific. When I moved on to another machine, it somehow happened to be the model owned by the salesman's sister, or the very same VCR he gave his mother for Christmas. In one store I expressed interest in four different machines, and, wouldn't you know it, in each case the clerk told me that someone in his family owned that particular make and model. Were they happy with these VCR's, I asked? Indeed they were. "What a remarkable coincidence," I suggested. "It goes to show you got good taste," he replied. □

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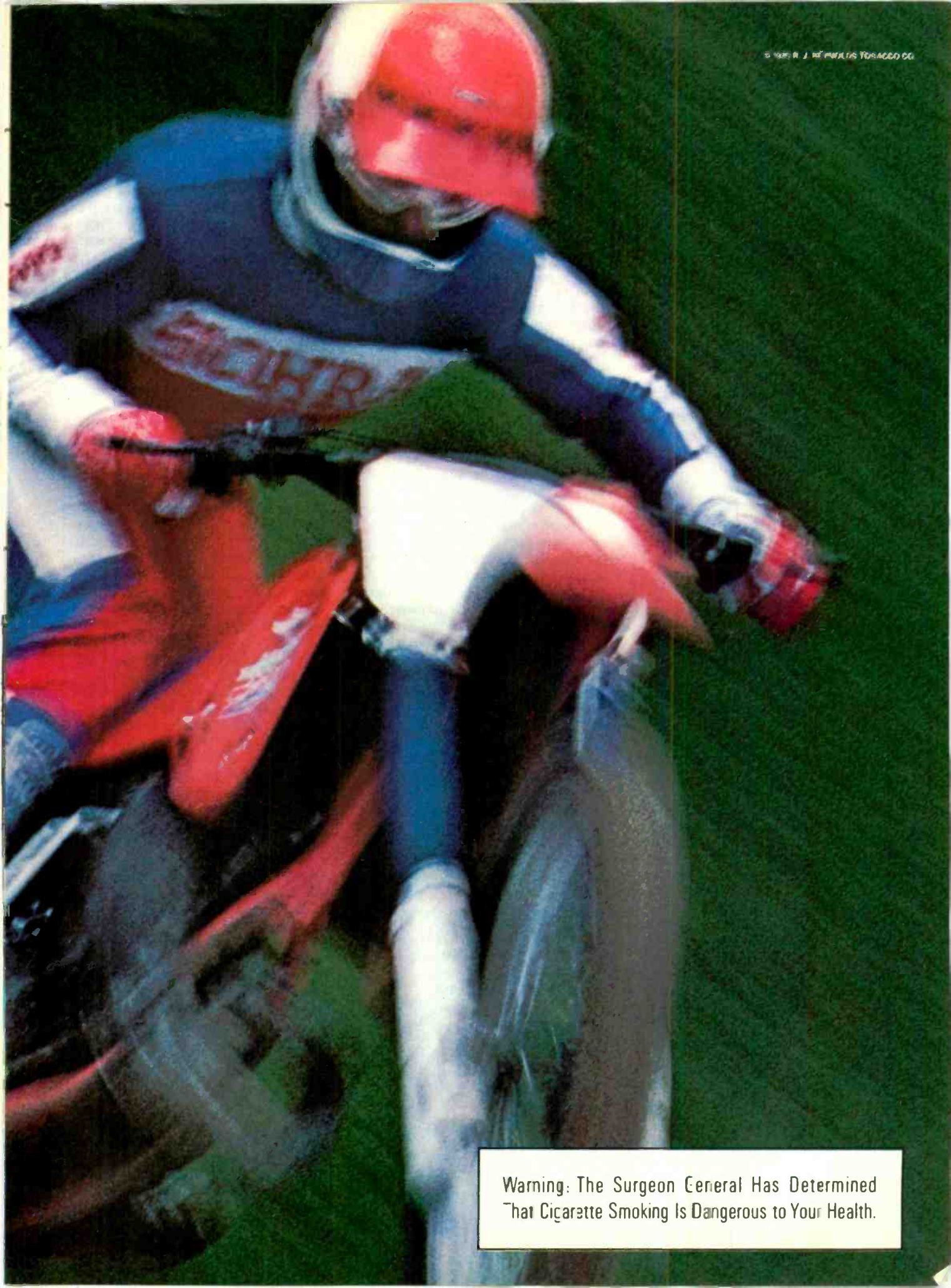
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by Julian Hirsch



Why Use a Tape Noise-Reduction System?

YOU use a noise-reduction system to reduce noise, right? Wrong! Today's most popular hi-fi "noise-reduction" systems—Dolby B, Dolby C, and dbx—can't do a thing about any noise already present in your audio programs. Their sole function is to reduce the amount of noise (mostly high-frequency hiss) *added* during the record/playback process. Judging by the letters we get, this distinction is not appreciated by many readers, who expect these systems to reduce noise from old records and tapes, or radio broadcasts, only to get a loss of high-frequency response instead.

Dolby B

All three popular noise-reduction systems are called *compressors*, for "compressor/expander." The Dolby B system, for instance, which is the most widely used, functions by automatically increasing the recording level for low-level high-frequency signals, leaving stronger portions of the program—and the lower frequencies—relatively unaffected.

During playback, an inverse operation takes place, reducing the volume of the low-level upper frequencies by (ideally) the same amount they were boosted in the recording. In the process, the correct frequency balance is restored to the program—assuming that the compression and expansion operations were exactly matched to each other—while any noise added by the tape recorder is reduced during playback. The result is a net improvement in signal-to-noise ratio.

Correct operation of the Dolby B system requires matching the compression and expansion characteristics as well as careful control of the recording and playback levels. The frequency response of the Dolby decoding circuits is controlled by a varying voltage derived from the playback signal. In the initial setup of a tape deck, its playback-circuit gain is adjusted to give a standard output-voltage level from a test tape recorded at 400 Hz with a signal flux density of 200 nanowebers/meter (the Dolby standard).

Most cassette decks have a mark (such as the Dolby "double-D" trademark) on their level meters or indicators that corresponds to the standard Dolby level. If the recording bias, equalization, and levels have been set properly for the specific tape formulation being used, a signal recorded at the Dolby level will be played back at the same level; thus, the recording and playback Dolby circuits will "track" properly and produce the desired results.

If your tape has an output level significantly different from the one

for which the deck was adjusted, the input and output frequency responses will *not* track, and the overall frequency response will vary dynamically with signal strength. Most cassette decks exhibit this effect to some degree. Fortunately, it is rarely audible because the Dolby B system operates only at low signal levels at which moderate tracking errors are masked by louder low-frequency portions of the program.

A more serious requirement of Dolby noise reduction is for an inherently flat record-playback frequency response in the tape deck. The successful decoding of a Dolby tape to produce a flat playback response depends critically on the similarity of the incoming signal and the playback signal. Any departure from flatness in the overall record-playback response of the recorder will be *doubled* when the Dolby B system is used. A reasonable response variation of ± 2 dB over all or most of the upper-frequency range degenerates to ± 4 dB when the Dolby B system is used for both recording and playback.

A significant deviation from flat response is a common result of using a tape for which the recorder was not adjusted. To prevent it, you should, ideally, determine which tape was used for the manufacturer's initial alignment and use it yourself. An alternative is to decide on a specific tape and have a competent technician adjust the recorder's bias, equalization, and levels for correct operation with Dolby B.

A correctly operating Dolby B system will reduce the added recorder noise by about 10 dB, a significant reduction. Although it does not eliminate hiss, Dolby B can make the difference between enjoyable listening and being irritated by obtrusive background hiss. A typical cassette deck without noise reduction has a noise level of perhaps -55 dB; cutting this to -65 dB makes the noise level comparable to that of an analog disc.

Dolby C

Dolby C, which is included in most good cassette decks and in many deluxe car cassette players, is an extension of Dolby B based on the same principles and using many of the same circuit elements.

Tested This Month

NAD 2200 Power Amplifier
 Toshiba XR-V22 CD Player
 Kenwood KX-780 Cassette Deck
 Canton Karat 300 Speaker
 Azden GM-P5L Phono Cartridge



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But the advantages don't stop there. Both receivers are complete Audio/Video control centers that are radically different—and significantly more versatile—than any others on the market. The S-X1130 delivers all the highly advanced audio and video performance of the S-X1100, with the added bonus of sharpness and fader controls for enhanced video art functions. And both units offer additional audio dexterity with "multidimension" for expanded stereo or simulated stereo, plus sound mixing capabilities.

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Putting More Pleasure in Sound.

Roughly speaking, Dolby C is like two Dolby B systems operating at different signal levels and in slightly different frequency ranges. Whereas Dolby B begins to take effect above 2,000 Hz and its operation is principally confined to levels between -20 and -40 dB, the Dolby C system operates over the range from 100 to 20,000 Hz at levels as low as -60 dB. Its 20-dB noise reduction is a vast improvement over the 10 dB of Dolby B. The noise level of a deck with Dolby C can easily fall in the -75- to -80-dB range, where it is likely to be inaudible.

With the increased performance of Dolby C comes an even greater dependence on a flat frequency response in the recorder. Since Dolby C is roughly equivalent to two staggered Dolby B processors, it further increases the effect of any response variation occurring between the encoded and decoded states.

Dolby C has another useful but relatively unpublicized feature: a "spectral-skewing" circuit that rolls off the extreme high frequencies (between 10,000 and 20,000 Hz) during recording by as much as 10

dB compared with the midrange level. A complementary high-frequency boost is provided in playback, restoring a flat playback response. This feature is not level dependent. The recording attenuation considerably reduces the possibility of high-frequency tape saturation, giving an 8-dB improvement in headroom at 15,000 Hz. The playback boost at those high frequencies has no significant effect on audible noise.

Dolby Compatibility

Because the two Dolby systems use much common circuitry, any Dolby C system can be switched to Dolby B operation. That capability was a key requirement of Dolby Laboratories when the Dolby C system was under development in order to preserve compatibility with the vast number of Dolby B machines and tapes already extant.

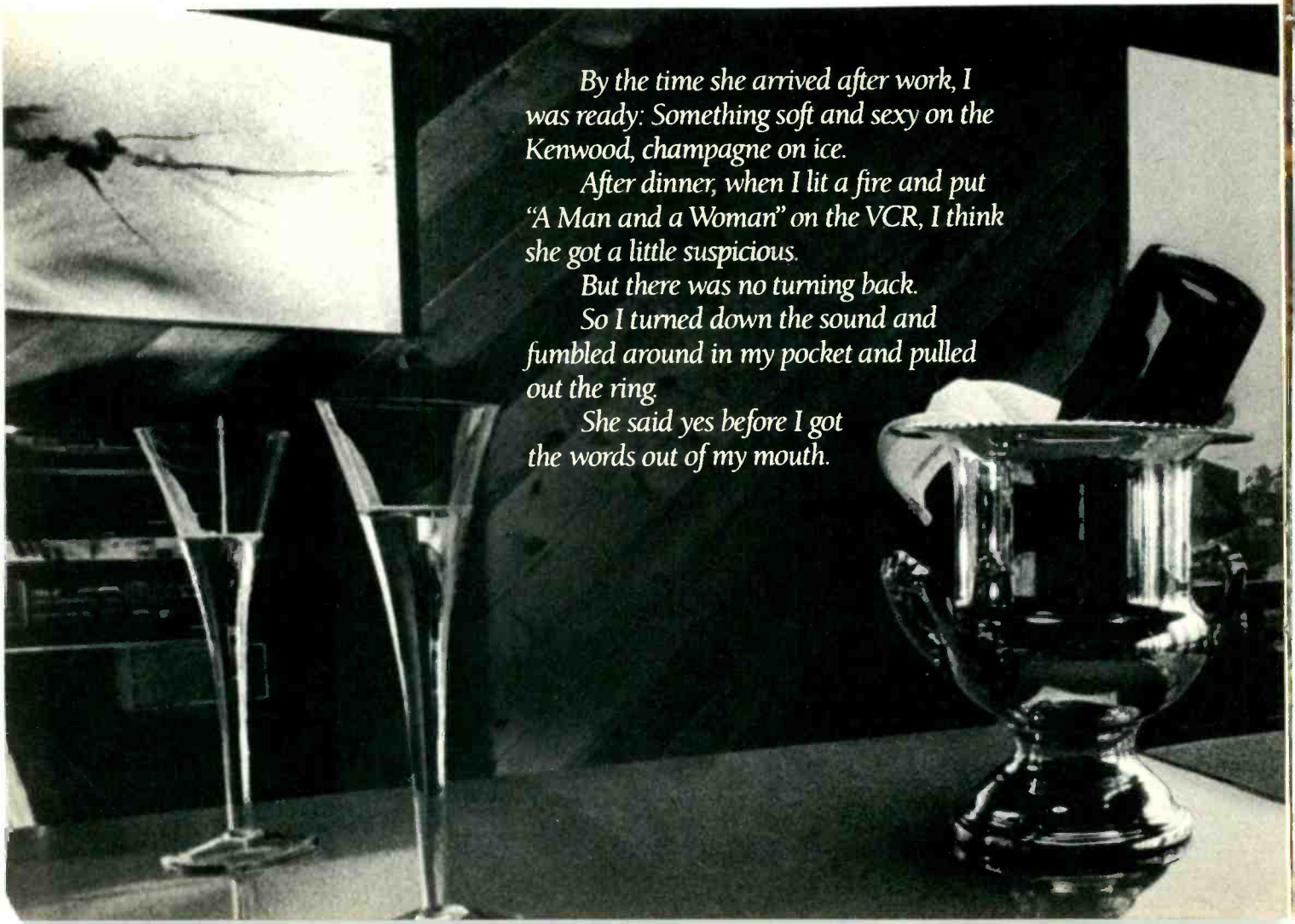
Compatibility is an important consideration in any two-step (encoding/decoding) signal-processing system. If even a small recorder response variation is magnified by the Dolby decoding circuits, what

happens when we try to play a Dolby B encoded tape without *any* playback decoding? Fortunately, the results look more serious in theory than they sound in practice.

Yes, the low-level frequency response will be altered, with a high-frequency boost amounting to perhaps 10 dB at 10,000 Hz for signals of -40 dB and below. But both the frequency range and magnitude of the boost are constantly varying with changes in the signal level. Thus, at -30 dB the major effect of the boost is at about 3,000 Hz, and at -20 dB the boost is only 5 dB at about 2,000 Hz. Simultaneously, the lower-frequency portions of the program continue to be unaffected, and to a great extent they mask the low-level modification of the high frequencies.

The overall effect of playing a Dolby B recording without decoding is a slightly bright sound, but one that rarely seems unpleasant or obviously unnatural. If necessary, a cut in the treble tone control will usually help.

When the Dolby C system was designed, a similar compatibility



*By the time she arrived after work, I
was ready: Something soft and sexy on the
Kenwood, champagne on ice.*

*After dinner, when I lit a fire and put
"A Man and a Woman" on the VCR, I think
she got a little suspicious.*

But there was no turning back.

*So I turned down the sound and
fumbled around in my pocket and pulled
out the ring.*

*She said yes before I got
the words out of my mouth.*

with the Dolby B system was deemed imperative. Initially, few tape decks had both systems, and Dolby Labs recognized that both commercially recorded and home-made Dolby C tapes might on occasion have to be played on decks with only Dolby B decoding. The two systems would have to be as compatible with each other as the Dolby B system is with undecoded playback. As a result, a Dolby C encoded tape played through a Dolby B decoder sounds a bit bright but still listenable. However, it is not practical to play a Dolby C tape with *no* decoding. In addition to being extremely bright, the sound will occasionally pump and surge in level to the extent that it would take a very determined (or tin-eared) person to listen to it for very long.

dbx

One or both of the two Dolby systems are built into virtually every cassette deck made in the world today. After years of use primarily in professional applications, the dbx noise-reduction system is now also featured in many home and auto-

mobile hi-fi systems. Although the dbx system is also based on compander circuits, it works quite differently from the Dolby systems.

The dbx system uses a full-range compander, which operates over essentially the entire audio range and at all program levels. It compresses the signal being recorded by a 2:1 ratio. In other words, a program that has an 80-dB dynamic range is recorded in a 40-dB range insofar as the tape deck is concerned. During playback, the compressed signal is expanded in a 1:2 ratio, restoring its original (80-dB) dynamic range. The noise added within the recorder is reduced by something like 30 dB in the process, giving an ordinary cassette deck a dynamic range of more than 80 dB. This effectively eliminates the deck as a source of noise—no small achievement.

Because the dbx system affects all program levels equally, there is no need to match recording and playback levels as with the Dolby systems. However, the requirement for a basically flat record-playback frequency response is still in effect, and, as with the Dolby systems, any

deviations from flatness will be exaggerated by dbx processing. Since the dbx system covers the full audio band, it reduces hum and low-frequency noise as well as hiss.

Despite its impressive performance qualities, the dbx system is not without its drawbacks. For one thing, a dbx-encoded tape is totally unsuitable for playback without dbx decoding, and it is completely incompatible with Dolby processors. The surging and pumping of the mismatched companding system, along with a gross frequency imbalance, make an undecoded dbx tape truly unlistenable. Although the system covers all audio frequencies, the response of its control system is weighted so that not all frequencies affect the companding equally.

For some years, dbx issued a series of encoded LP records that, when properly decoded, had the totally silent background we now enjoy with CD's, and there have been a few prerecorded dbx cassettes as well. Nonetheless, most dbx tapes are now made on home decks for use either at home or in the car. *(Continued on page 112)*

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PHOTOS BY RED AXON

NAD 2200 POWER AMPLIFIER

*Julian Hirsch,
Hirsch-Houck Laboratories*

DESPITE its conventional appearance, the NAD 2200 is radically different from other stereo power amplifiers in its design and performance, some aspects of which border on the spectacular. It carries a relatively moderate power rating of 100 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.03 percent distortion. In size, weight, and price, it is similar to a number of other good 100-watt amplifiers. Not surprisingly, it follows the NAD tradition of giving its amplifiers conservative power ratings and the ability to drive low-impedance speaker loads without difficulty (the clipping power output is specified as 140 watts into 8 ohms or 200 watts into 4 ohms).

However, the NAD 2200—which the manufacturer calls the “Power Tracker”—has some remarkable dynamic power capabilities. Its dy-

amic headroom is rated at 6 dB, which means that it can deliver—in 20-millisecond bursts, twice per second—400 watts per channel to 8 ohms, 600 watts to 4 ohms, and 800 watts to 2-ohm loads. If that is not enough, the amplifier can also be operated in a bridged (mono) mode, in which it is rated to deliver up to 400 watts of *continuous* output into 8 ohms—or, in terms of dynamic power, 1,200 watts into 8 ohms and 1,600 watts into 4 ohms! It is also said to have a wide “dynamic power envelope,” which means that it can maintain these high levels for longer than the standard 20-ms bursts.

The importance of high dynamic power output for realistic music reproduction has been widely recognized for some years. One way to achieve it is by using a signal-controlled, or “smart,” power supply, in which the output voltage is controlled by the instantaneous signal level and automatically adjusts itself to accommodate the brief high peak levels found in most musical and vocal waveforms. Since the average power requirement is usually one-tenth or less of the peak power demand, the switched-voltage design approach offers the attractive possibility of doing without a large, expensive, heavy-duty power supply whose full output will be needed

for only a small fraction of the time. Instead, the amplifier can use a relatively compact, inexpensive, low-voltage power supply almost 100 percent of the time, augmented by a second, higher-voltage supply that comes into action only as needed.

The output transistors of the NAD 2200 amplifier are high-powered, fast-switching devices capable of delivering some 60 amperes of peak current for brief periods. One key difference between the 2200 and most other switched-voltage amplifiers is the choice of the power level at which the changeover occurs. In some amplifiers it occurs at a fairly low power output, such as 15 watts. This arrangement offers economies in manufacture, since most of the time the amplifier generates little heat and requires a small heat-dissipating surface. On the other hand, the switching often produces a transient “glitch” on the waveform, which could conceivably be audible, at the point where the supply voltage increases.

NAD chose to design the 2200 as an inherently powerful amplifier, with the size, weight, and heat-dissipating ability (as well as the price) of a typical 100-watt unit. Because of its conservative design, its clipping power output, even in the “low power” mode, is about 140 watts

per channel. Since the switch to a higher supply voltage occurs at the 140-watt level, any switching transients are masked by the high acoustic level.

A number of protection systems were built into the 2200, one of the most interesting of which is the "thermal feedback" that protects the high-voltage supply and the output transistors. NAD studies indicated that actual high-level music transients are likely to last much longer than the 20 milliseconds of the standard EIA dynamic power measurement, and that considerably more than the continuous power level might be required for several hundred milliseconds. However, a conventional single-voltage amplifier would be prohibitively large and expensive if it were designed to deliver several times its normal rated output for that length of time. The answer was a higher operating voltage, the value of which is ultimately limited by the temperature of the output transistors and, to a lesser degree, of the power transformer.

Under normal operating conditions, the full voltage of the NAD 2200's power supply is made available. As the temperatures increase, the level of the second voltage is reduced sufficiently to prevent damage to the amplifier. In the limiting case of continuous high-power drive, the second power supply effectively shuts off, leaving the amplifier operating as a "100-watt" unit on its lower-voltage supply. Because of the very conservatively operated output transistors, the amplifier cannot overheat, no matter how long it is run or at what level. And all this without a cooling fan!

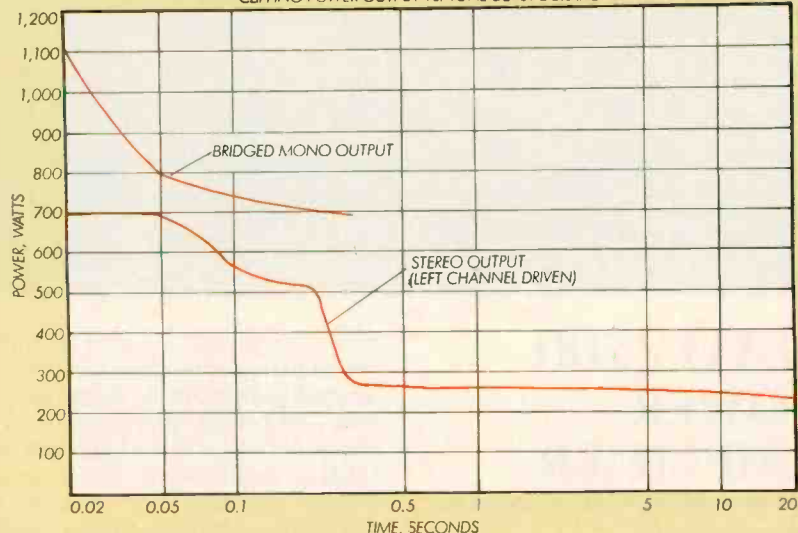
The 2200 also features NAD's Soft Clipping circuit, which is slightly modified to come into play only about 0.5 dB before the amplifier is about to clip. The circuit rounds the abrupt waveform edges that normally accompany clipping, thereby removing the high-order harmonics that sound so harsh and can also damage a tweeter—no small consideration for an amplifier as powerful as this one. The 2200's front-panel overload light is activated by a circuit that senses when audible clipping is about to occur.

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NAD 2200 POWER AMPLIFIER
CLIPPING POWER OUTPUT VS. TONE-BURST DURATION



HIRSCH-HOUCK LAB MEASUREMENTS

1,000-Hz continuous output power at clipping: 158 watts into 8 ohms, 240 watts into 4 ohms, 365 watts into 2 ohms

Clipping headroom (relative to rated output): 4 dB (8 ohms)

Dynamic power output: 450 watts into 8 ohms, 685 watts into 4 ohms, 870 watts into 2 ohms

Dynamic headroom: 6.5 dB (8 ohms)

Harmonic distortion (1,000 Hz, 8 ohms): 1 watt, 0.0042%; 100 watts, 0.0051%

Slew factor: greater than 25

Sensitivity (for a 1-watt output): 0.75 volts

A-weighted noise (referred to a 1-watt output): -93 dB

possible power available at low frequencies (which are normally present in both channels in the same phase and thus present an additive load to the power supply), NAD has connected the two channels (internally) in opposite phase. The signals are reversed to the correct polarity at the speaker binding posts. This circuit configuration prevents the amplifier from being used with speaker switching systems in which both channel outputs have a common ground.

The NAD 2200 measures 16½ inches wide, 14¾ inches deep (including the rear-panel connectors), and 4⅞ inches high. It is finished in dark gray and weighs 29 pounds. Price: \$448. NAD USA, Dept. SR, 675 Canton St., Norwood, MA 02062.

Lab Tests

Preconditioning the NAD 2200 for 1 hour at 33 watts output into 8-ohm loads left its top cover (over the internal heat sinks) only moder-

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SANYO
THE MODERN ART OF ELECTRONICS.

ately warm. With both channels driven at 1,000 Hz, one channel clipped at 158 watts output. Into 4 ohms, the power at clipping was 240 watts, and into 2 ohms it was 365 watts (the last measurement was made with only one channel being driven, since an internal d.c. fuse blew when we drove both channels to clipping with 2-ohm loads).

The 1,000-Hz distortion into 8 ohms was about 0.005 percent at very low power (0.1 watt). It decreased to 0.0035 percent at 10 watts and reached 0.0082 percent at 150 watts, just before clipping occurred. With 4-ohm loads the distortion was very similar at most power outputs and reached 0.0071 percent at 200 watts. The 2-ohm distortion was also very low at most power levels, reaching 0.0225 percent at 300 watts. Into 8 ohms, the distortion was lowest, between 0.001 and 0.002 percent, from 30 to 100 Hz; it rose into the 0.01 to 0.02 percent range from 1,000 to 20,000 Hz at power outputs of 100, 50, and 10 watts.

Dynamic power measurements were somewhat complicated by the thermal feedback system of the amplifier. As it heated up the maximum power decreased, so we were never able to repeat our measurements exactly on successive attempts. Nonetheless, the results were very impressive. With the standard 20-millisecond test signal, the maximum output was 450 watts into 8 ohms (for a dynamic headroom of 6.5 dB), 685 watts into 4 ohms, and 870 watts into 2 ohms. We repeated these measurements with 4-ohm loads and with longer-duration tone bursts (see graph).

The output of 700 watts did not change for bursts in the 20- to 50-ms range, but it decreased slightly to 570 watts with 100- and 200-ms bursts and to 285 watts with bursts of 300 ms and longer. (The output did not drop significantly with a 1-second burst, and, in fact, it remained at 240 watts in a "continuous" measurement lasting perhaps 30 seconds.) We repeated this test (in part) using the bridged mode, reading outputs of 1,100 watts for 20 milliseconds, 800 watts for 50 milliseconds, and 700 watts for 100 milliseconds.

The frequency response of the

NAD 2200, measured through its "normal" inputs, was down 3 dB at 12.5 and 45,000 Hz, and it was flat within +0, -0.3 dB from below 20 Hz up to 20,000 Hz. Through these inputs the bandwidth of the amplifier is limited by internal filters.

For listening to music in a home environment, the NAD 2200 may well be the most powerful amplifier you can buy. If ever an amplifier could be said to be "digital ready," this one can.

Using the "lab" inputs, the lower -3-dB frequency was below our 5-Hz measurement limit, and the upper -3-dB frequency was 135 kHz. The A-weighted noise of the amplifier was 93 dB below 1 watt, or 113 dB below its rated output. The amplifier was stable when driving simulated reactive speaker loads, and its reactive load factor was 1.6 dB at 63 Hz. The slew factor exceeded our measurement limit of 25.

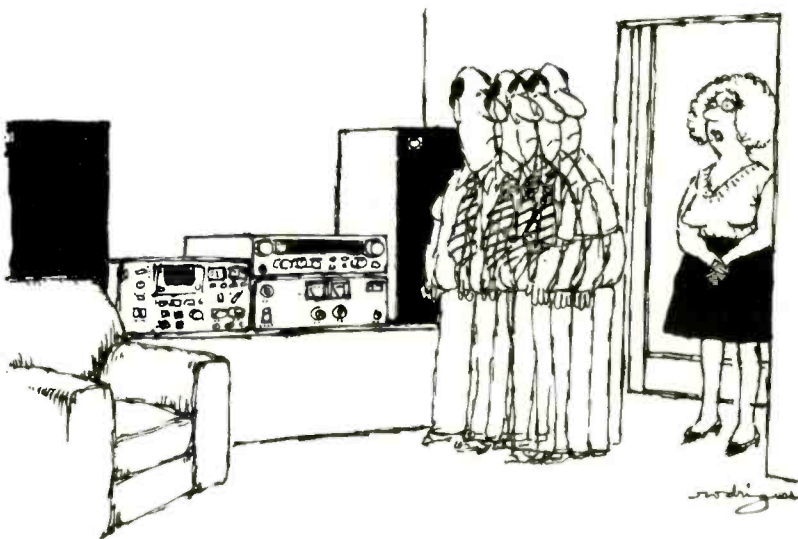
Comments

Our measurements speak eloquently about the performance of the NAD 2200. We also used it as

the power source for some of our pulse-power tests of loudspeakers (1 cycle of a sine wave followed by 128 cycles off) and found that its bridged-mode output was just short of 2,000 watts into a 2-ohm impedance! For listening to music in a home environment, the NAD 2200 may well be the most powerful amplifier you can buy, especially if you use a pair of them in the bridged mode (which probably would be a case of "overkill" for most people). If ever an amplifier could be said to be "digital ready," this one can. Its readiness is not merely a matter of being louder than other amplifiers, although not many others could match it in sheer decibel level, but of its virtual immunity to overload with *whatever* program peaks an amplifier might encounter, even on Compact Discs.

The Soft Clipping circuit works well, although the chances that anyone will drive the NAD 2200 to within 0.5 dB of its clipping point are slim indeed. The circuit has no measurable effect on the amplifier's distortion or other characteristics, so it can be left on at all times. We found that the overload light did not flash until the output waveform was heavily clipped, but this is a minor matter. No matter how you look at it, the NAD 2200 is a superb amplifier and an outstanding value.

Circle 140 on reader service card



"... Joe, I don't think it's multipath at all. I think it's you!"

A bird of a different feather.



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NO OTHER AUDIO SYSTEM
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The Sanyo Artisan Series is a new breed of home audio system. The Artisan System 1960, for instance, combines all the most sophisticated components available today, to bring



you sound so true to life it's absolutely chilling. There is a fully-programmable compact disc player with an incredible 96dB dynamic range. A 100-watt per channel stereo amp with 10-band graphic equalizer, AM/FM digital tuner, dual-transport cassette recorder, linear

tracking turntable, and a 15" 3-way speaker system. Like individual members of an orchestra, they work together. In a system which you control totally from the comfort of your easy chair. The Sanyo Artisan Series. They're poles apart from any other systems you can own.

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CIRCLE NO. 33 ON READER SERVICE CARD



TOSHIBA XR-V22 COMPACT DISC PLAYER

Julian Hirsch, Hirsch-Houck Laboratories

THE Toshiba XR-V22 is unique among today's Compact Disc players by virtue of having two separate disc drawers and being able to operate in some respects like two distinct players. Since the same electronic circuits, mechanical disc drive, laser, and laser tracking system are used for both disc trays, the XR-V22 is not fully equivalent to a pair of CD players, but in some ways it is even more versatile.

Most of the operating controls of the XR-V22 are conventional or at least equivalent to those of other CD players. The small, red numerical display can be switched to show either the current track/index number, the elapsed playing time of the current track, the total elapsed playing time on the disc, or the accumulated playing time for both discs when programmed selections are divided between them. The XR-V22 can be programmed to play up to fifteen selections on each of two discs, or thirty in all, in any order.

Programs are selected by pressing small buttons (numbered 0 through 9) below the disc trays. After a track number has been selected, either the MEMORY-A or the MEMORY-B button is pressed to enter its number in the

stored program for tray A or tray B (the LED above the corresponding tray lights up). The memory for each tray can be canceled by simultaneously holding in its memory button and the CLEAR button. If only one disc is loaded, play is started by pressing the corresponding button (A-PLAY or B-PLAY).

In order to play selections from both trays, the REPEAT button must first be pressed, then the play button for the tray containing the first selection. When a changeover is required, the internal mechanism moves the laser pickup from one tray to the other and starts its disc turning. The only external indication of which tray is in use is the location of the blinking LED for the selection being played. The complete programmed sequence will repeat until the REPEAT button is pressed a second time. To play each disc in full before changing to the other, you press REPEAT without programming any track numbers, then the appropriate play controls.

Quick random access to any track on a disc is possible by pressing one of the search keys, UP/FF or DOWN/REV. Each touch moves the pickup to the start of the next or the current track, and the track number is

shown in the display window. It is easy to access a high-numbered track (up to No. 99) by simultaneously holding in one of the search keys and the appropriate play button, but there is no provision for hearing the program while scanning at high speed. Tracks 1 to 15 can be accessed directly by entering the track number on the keypad and pressing the play button.

The Toshiba XR-V22 is a compact unit, only wide enough to contain the two disc drawers and the control buttons. It measures 13 $\frac{3}{8}$ inches wide, 14 $\frac{3}{16}$ inches deep, and 4 $\frac{5}{16}$ inches high, and it weighs about 13 $\frac{1}{2}$ pounds. Price: \$499.95. Toshiba America, Inc., Dept. SR, 82 Towata Rd., Wayne, NJ 07470.

Lab Tests

Digital devices, by their very nature, usually work correctly or not at all. Therefore, it was not surprising that the Toshiba XR-V22 delivered the superb performance we have come to expect from a CD player. Its measured frequency response was flat within 0.1 dB from 20 to 10,000 Hz and within ± 0.25 dB from 10,000 to 20,000 Hz. The two channels had essentially identical performance, as did both disc trays, and the channel levels differed by less than 0.1 dB.

The 1,000-Hz harmonic distortion (virtually all second-harmonic) was 0.013 percent at 0 dB (maximum level), decreasing at lower levels to 0.0032 percent at -6 dB and 0.0018 percent at -12 dB. The

A-weighted noise output, referred to a 0-dB level, was -97.1 dB. Flutter was unmeasurable (less than 0.001 percent). Channel separation was 92.5 dB at 1,000 Hz, decreasing to 76.5 dB at 20,000 Hz. The output low-pass filtering of the audio channels is done with analog filters, and there was a moderate amount of ringing on an impulse or square-wave test signal at about 17,000 Hz. These measured performance qualities do not differ materially from those of any other CD player, and the minor differences in such characteristics as noise, distortion, or frequency response have no audible significance.

There are, however, genuine differences among CD players in respect to their error-correction capabilities and ability to withstand shock and vibration. Here the Toshiba unit showed its true mettle, being immune to rather severe blows to the top or sides of the cabinet and tracking the calibrated flaws of the Philips TS4A test disc without difficulty. The difficult transition between Tracks 17 and 18 of the Philips TS4 disc, which have no silent interval between them, was negotiated without any detectable loss of program from either track. Cueing time from Track 1 to Track 15 of the Philips TS4 disc was 4.2 seconds, which is typical of current third-generation CD players. A total of 8.8 seconds was needed for a transition from Track 1 of the disc in tray A to Track 15 of the disc in tray B, not much time considering that the mechanism had to move the pickup system from one tray to the other and get the second disc up to speed before it could begin searching for the desired track.

Comments

Frankly, when we read the press releases for the Toshiba XR-V22, we wondered why anyone would want to have two CD mechanisms in one unit. The idea seemed to be pure gimmickry.

Well, it is nothing of the kind. Although many of us would have no particular reason to program a sequence of selections divided between two discs, some people might find this capability very useful. Furthermore, it is nice to be able to load a pair of discs and enjoy up to two

FEATURES

- Two front-loading motor-driven disc drawers with common disc-drive and laser-pickup mechanism
- Programmable playback in any order of up to fifteen selections on each disc (thirty in all), with automatic transfer between discs
- Sequential playback of two discs with indefinite repeat
- Analog low-pass filters
- Quick access to any track (up to No. 99) using search keys or numerical keypad
- Fast-forward and reverse scan to locate desired portion of program
- Four-digit multifunction display switchable to show track number, elapsed time of track, or total playing time of disc(s) loaded

TOSHIBA XR-V22
FREQUENCY RESPONSE

HIRSCH-HOUCK LAB MEASUREMENTS

<p>Maximum output level: 1.82 volts</p> <p>Total harmonic distortion at 1,000 Hz: 0.013% referred to 0 dB; 0.0018% referred to -12 dB</p> <p>Signal-to-noise ratio: 97.1 dB A-weighted</p> <p>Channel separation: 95 dB at 1,000 Hz; 76.5 dB at 20,000 Hz</p> <p>Frequency response: ±0.25 dB</p>	<p>from 20 to 20,000 Hz (see graph)</p> <p>Cueing time: 4.2 seconds for one disc, 8.8 seconds for two discs, including transfer between trays</p> <p>Impact resistance: sides, A; top, A</p> <p>Cueing accuracy: A</p> <p>Defect tracking: tracks highest defect levels on Philips TS4A test disc</p>
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hours of uninterrupted high-quality listening. Since the discs will repeat in sequence indefinitely until the user decides otherwise, the player can be used to provide a generous program of background music.

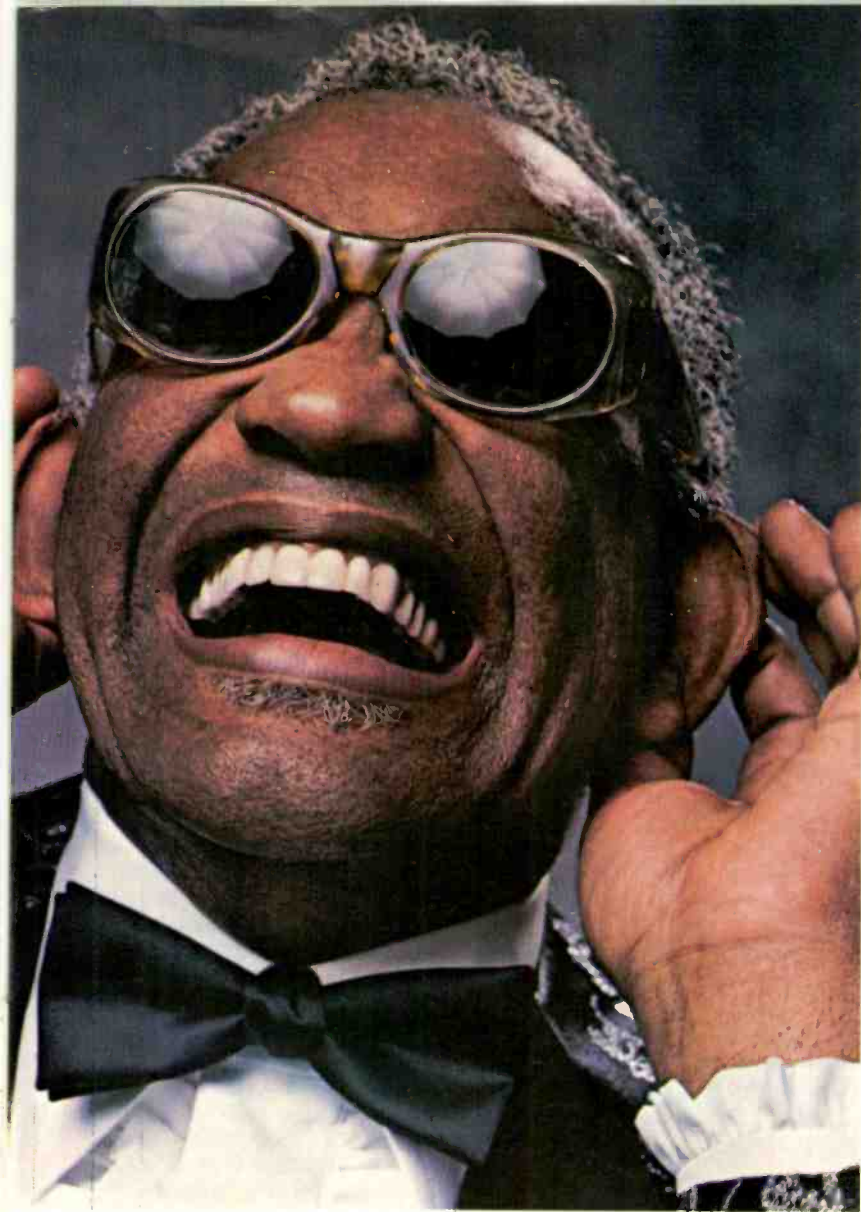
But none of these capabilities would have aroused much enthusiasm in me if any key performance parameter or feature had been sacrificed to obtain them. True, there are a few features offered by some other CD players that the XR-V22 does not have, and if wireless remote control, index or phrase cueing, and fast scanning with audible sound are important to you, this machine may not be your best choice. But no single product can offer everything to every user, except possibly at an exorbitant price.

In its fundamental performance, the Toshiba XR-V22 is one of the best CD players we have seen. Very few others can take a heavy fist blow on their top surface without skip-

ping or shutting down, as this one can. Although the slewing speed of its laser tracking system is not as blindingly fast as in one or two other players we have seen, it is at least average in that respect. Possibly the only thing about the XR-V22 that struck us as out of the ordinary in a negative sense was the mechanical noise it emitted as the disc-drive and laser pickup shifted between trays. But the noise lasts only a few seconds, and in ordinary operation the player is silent mechanically.

We would expect a player with the added mechanical complexity of the XR-V22 to be more expensive and larger than a conventional player. In fact, however, this is a very compact machine, and it is also very competitively priced in today's market. No matter how you look at it, the Toshiba XR-V22 represents a novel but very functional approach to CD player design.

Circle 141 on reader service card



Most video systems treat you as if you were deaf.

by Ray Charles

"Did you ever close your eyes and *listen* to most video systems? I've got to tell you: it's sad. What they do for your eyes they undo for your ears.

Then the Pioneer folks ask me to listen to their videodisc system called LaserDisc.

I'm a little skeptical, but I put my ear to it. And, I've got to tell you, I'm amazed. The

sound is as good as anything I ever heard on my stereo. Maybe better.


I say, 'That's heaven for me, but what's the picture look like for the rest of the folks?'

And the experts tell me the picture blows every other video system away. And that since the discs are played back by a laser beam, they can't wear out the way records and tapes do.

Now I bet you're thinking, 'But I already own a stereo,' or 'I already own a VCR.' Well, whether you're watching music or movies, you still need a Pioneer LaserDisc. Because LaserDisc does what no other system can do. It brings the best picture and best sound together.

And that, my friend, sounds pretty good to me."



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Video for those
who really care about audio.

The model shown here is the Pioneer® LD-700 LaserDisc brand videodisc player. LaserDisc™ brand videodisc player is a trademark of Pioneer Electronics Corp. © 1985 Pioneer Video, Inc. All rights reserved.

CIRCLE NO. 25 ON READER SERVICE CARD

RECOG

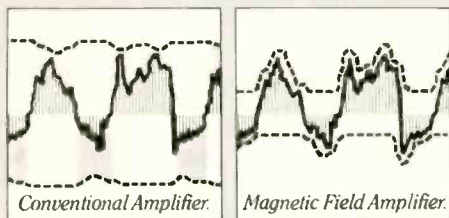
Why the Carver M-500t Magnetic Field Power Amplifier has helped begin an industry trend and how it has stayed ahead of its inspired imitators.



Twice in the last decade, Bob Carver has taught the high fidelity industry how to make amplifiers that give you better performance and value. Both times his bold lead has attracted followers. Still, as evidenced by the current release of the M-500t, Carver sets standards yet unequalled in the audio community.

With its astonishingly high voltage/high output current and exclusive operation features, it is a prime example of why Carver remains the designer to emulate:

- Continuous FTC sine-wave output conservatively rated at 250 watts per channel.
- Produces 600 to 1000 watts per channel of dynamic power for music (depending on impedance).
- Bridging mode delivers 700 watts continuous sine-wave output at 8 ohms.
- High current Magnetic Field power supply provides peak currents up to ± 100 amps for precise control of voice-coil motion.
- Designed to handle unintended 1 ohm speaker loads without shutting down.
- Equipped with infinite resolution VU meters.



Solid line: audio output signal
Broken line: power supply voltage
Shaded area: wasted power
Vertical lines: power to speakers.

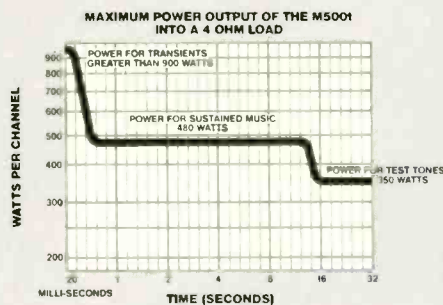
POWER EXPRESSED BY THE DEMANDS OF MUSIC.

The Carver M-500t Power Amplifier responds to musical transients with better than 700 watts per channel of instantaneous peak power through 8 ohm speakers. Well over 900 watts per channel into 4 ohm speakers.

And yet its Federal Trade Commission Continuous Average Power Rating is 250 watts per channel into 8 ohms.

The gulf between the two power ratings represents Bob Carver's insistence that amplifier design should fit the problem at hand. That problem is reproducing music with stunning impact, not simply satisfying a sine-wave test which doesn't even include speakers or sound sources. Hence the seeming gulf between the two ratings.

Bob reasoned that since music is composed of three basic types of power waveforms, those types of waveforms are what an amplifier should be designed to satisfy.



The Carver M-500t delivers massive power at three important output levels.

First there are instantaneous peak transients – the sudden smash of cymbals, drums, or the individual leading edge attack of each musical note. While these waveforms last less than 1/100 of a second, they form the keen edge of musical reality which must be present if you are to realize high fidelity. Though momentary, they also demand a tremendous amount of amplifier power.

Directly following instantaneous transients are combinant musical crests of demand that come from multiple instruments and their harmonics. These long term power demands may last up to several seconds but usually come and go in less than a second. And yet they can tax anything but an exceptionally powerful amplifier.

The third type of power demand is represented by the average power contained in the music, and is approximately one third to one half of the FTC continuous power rating.

At extremely high output current levels, the Carver M-500t not only delivers over 700 watts of instantaneous peak power for instantaneous transients, but can deliver over 600 watts

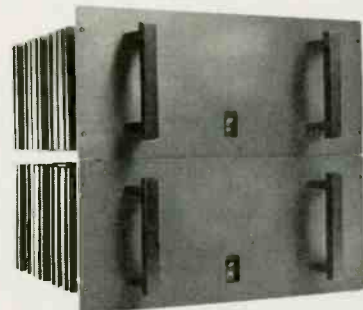
RMS of long term power for demands lasting up to several seconds. The M-500t provides more power, more current and more voltage than any comparably priced amplifier ever offered.

THE MAGNETIC FIELD AMPLIFIER VS. CONVENTION.

Audiophiles, critics and ultimately other manufacturers have each accepted the wisdom of Bob Carver's fresh approach to delivering power in musical terms. Yet only Carver has so elegantly translated theory into practice.

Rather than increase cost, size and heat output with huge storage circuits, Magnetic Field Amplification delivers instantaneous high peak and longterm power from a small but powerful Magnetic Field Coil. The result is an amplifier capable of simultaneous high current and high voltage that can do sonic justice to the dynamics of Compact Discs and audiophile records in a compact, cool-running design. An amplifier costing considerably less than the ultra-esoteric models which figured significantly into the genesis of its circuitry. For a reprint of the full story of its development as well as a catalog of Carver high fidelity audio components please call or write to us.

Figure 1



This \$7,000 pair of esoteric amplifiers figure significantly into the heritage of the M-500 "T" version circuitry.

Figure 1 above shows a \$7,000 pair of ultra-esoteric mono amplifiers. No expense was spared on their admittedly magnificent but still conventional design and construction.

Figure 2 shows the massive toroid output transformers contained in these prestigious audiophile designs. At 10% regulation, their output current is ± 50 amperes.

All conventional amplifiers are condemned to using this type of design.

DEFINITION.

Figure 2 also shows the patented Magnetic Field Coil employed in the Carver M-500t. Its output current is ± 100 amps at 10% regulation!!!!

Figure 2



Over 40 pounds of toroid coils put out half the current of a single ten-ounce Magnetic Field Coil

DISTINGUISHING FEATURES OF THE CARVER M-500t.

Power is mandatory for dynamic impact and musical realism. And yet power requires control and finesse. While the Carver M-500t isn't the only amplifier to deliver adequate output, it is one of the few that tempers force with protection circuits beneficial to both the amplifier and your loudspeaker system.

◆ These include DC offset, short circuit power interrupt as well as two special computer-controlled speaker monitor circuits which protect against excessive high frequency tweeter input and an overall thermal overload.

◆ The Carver M-500t continuously displays power output through dual, lighted infinite resolution VU-ballistic meters. Meters which can react to musical transients as brief as 1 millisecond.

◆ The M-500t is quiet. Inside and out. Its circuitry has the best signal-to-noise ratio of any production amplifier. Better than -120 dB. And, in spite of its massive output capability, the M-500t does not require a noisy fan to dissipate heat. Thanks to the cool running Magnetic Field Amplifier circuitry.

◆ No other amplifier in the M-500t's price or power ranges is capable of handling problematic speaker loads as low as 1 ohm. Whether required by certain brands of speakers, or inadvertently derived by pairing too many low impedance speakers at one set of output terminals, all conventional amplifiers simply shut down or blow their fuses when faced with this condition.

◆ In stereo use, both channels of the M-500t can actually borrow from each other during unequal output demands. In addition, Carver amplifiers have pioneered phase inversion circuitry which takes advantage of the in-phase (mono) characteristics of bass to essentially double available power supply current at low frequencies.

◆ Finally, the Carver M-500t can be used in a bridged mode as a 700 watt RMS per channel mono amplifier without any switching or modification.

MUSIC IS THE FINAL PROOF.

Were you to buy a power amplifier solely on features and performance specifications, painstaking comparison would inevitably lead you to the Carver M-500t.

But we are sure that your final judgment will be based on musicality. It is here that the M-500t again distinguishes itself.

Bob Carver has carefully designed the M-500t to have a completely neutral signal path that is utterly transparent in sonic character. The result is more than just musical accuracy. It means a total lack of listener fatigue caused by subtle colorations sometimes exhibited by conventional amplifier designs, regardless of their power rating.

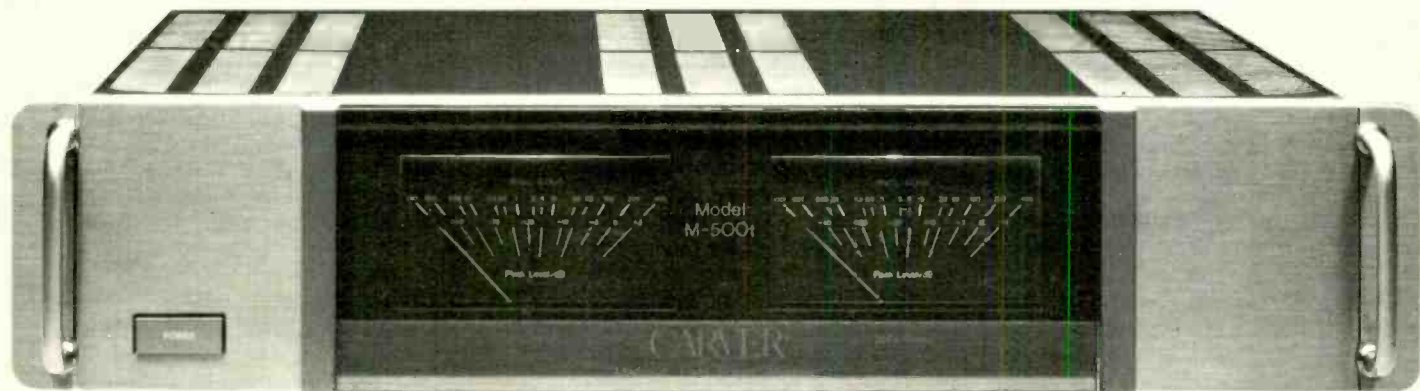
It means a veil is lifted between you and your musical source as the most detailed nuances are revealed with realism, believability and delivered with stunning impact.

VISIT YOUR CARVER DEALER FOR A SURPRISING AUDITION.

We invite you to audition the Carver M-500t soon. Against any and all competition. Including those who are only now embracing the principles which Bob Carver has refined over the last several years.

We doubt that you will be surprised when the M-500t lives up to the claims made in this advertisement. What will surprise you is just how affordable this much power, musicality and accuracy can be.

SPECIFICATIONS: Power, 251 watts per channel into 8 ohms 20Hz to 20kHz, both channels driven with no more than 0.15% THD. Instantaneous Peak Power, 1000 watts into 2 ohms, 950 watts into 4 ohms, 600 watts into 8 ohms. Longterm RMS Power for Music, 500 into 2 ohms, 450 into 4 ohms, 300 into 8 ohms, 1000 watts bridged mono into 4 ohms, 900 watts bridged mono into 8 ohms. Bridged Mono RMS Continuous Power, 700 watts continuous into 8 ohms. Noise -120 dB IHF Weighted. Frequency Response, ± 0.3 dB 1Hz-100kHz. Slew Factor, 200. Weight, 25 lb. Finish, light brushed on thracite, baked enamel, black anodized.



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Distributed in Canada by Evolution Technology

CIRCLE NO. 49 ON READER SERVICE CARD



KENWOOD KX-780 CASSETTE DECK

Julian Hirsch, Hirsch-Houck Laboratories

KENWOOD'S KX-780 is a modestly priced three-head cassette deck that contains both Dolby B and Dolby C noise-reduction systems. Independent encode/decode circuits for the record and playback heads allow monitoring a program through the playback head while recording. The record and playback heads, which have separate magnetic systems and gaps, are housed in a single physical structure so that their relative azimuth alignment, set precisely at the factory, remains unchanged over the life of the machine.

The KX-780's playback head is made of a Hot Isostatic Pressed Ferrite material that is claimed to provide low noise and relative insensitivity to temperature changes as well as an optimally contoured tape-contact surface. The playback-head gap is 0.8 micrometer. The record head, with a 3-micrometer gap, has a Sendust core and Kenwood's Super Surface Treatment, which is said to provide high resistance to abrasion. The microprocessor-controlled, solenoid-operated tape transport uses a single, electronically controlled d.c. motor.

The Kenwood KX-780 has some

unusual and useful features we have not seen elsewhere. For example, it has a skip-search function that advances and rewinds the tape in precise, limited steps. If the fast-forward or rewind button is pressed while the machine is in play mode, the index counter displays 0100 and the tape moves in the selected direction at high speed while the index counts down to 0000. The deck then returns to the play mode and the correct index reading is restored. Thus, the tape can be repeatedly shuttled back and forth in steps of 100 "index units." If one of the fast-speed buttons is pressed two or more times in rapid succession, the tape-movement increment is 100 times the number of presses.

A ZERO STOP feature is engaged by setting the counter to 0000 at the desired point, after which either the fast-forward or rewind button will return the tape at high speed to that position. A variation on this feature makes it possible to return quickly and accurately to the start of a recorded segment—if you want to rerecord that segment, for instance—by pressing the rewind key while the deck is still in the record mode. After the tape returns to the

point where recording had started, it stops and the deck enters the pause mode; pressing the record button starts the recording process over again.

The KX-780's record function, which can only be activated when the tape is stopped, does not require simultaneous operation of the record and play controls to begin recording. The record-mute function is activated by pressing the record button twice in quick succession, which inserts a 4-second silent interval before the tape stops and the deck enters the pause mode; another touch on the record button begins recording. Holding the button in on the second press allows the silent interval to be extended as long as desired.

The KX-780's controls are functionally arranged for straightforward operation. The deck is finished in black and measures about 12 $\frac{3}{8}$ inches wide, 12 $\frac{3}{4}$ inches deep, and 4 $\frac{3}{8}$ inches high. It weighs about 10 $\frac{1}{2}$ pounds. Price: \$355. Kenwood Electronics, Dept. SR, 1315 E. Watson Center Rd., Carson, CA 90745.

Lab Tests

The playback frequency response of the Kenwood KX-780 with normal (ferric, or Type I) 120-microsecond (μ s) equalization was measured both with our BASF IEC standard test tape and with a Japanese A-BEX tape that Kenwood uses in its own recorder tests. The Japanese tape meets the IEC 120- μ s standard

"I found a road to college that's making me feel exhilarated, exhausted and proud."

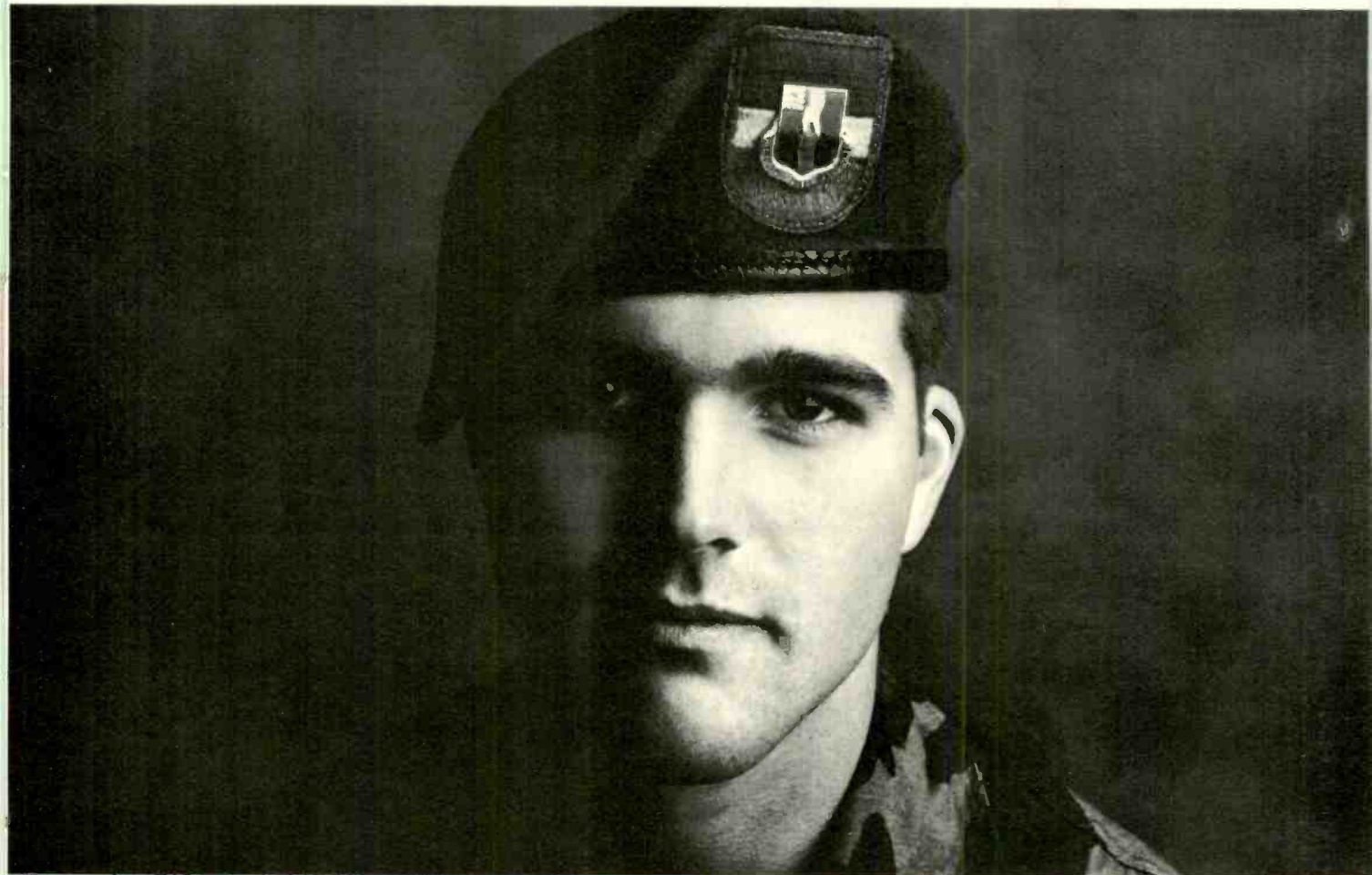
SP4 Mark Butcher, Airborne Scouts

"When I decided to take advantage of the Army College Fund, I decided I'd make the most of the experience. My badges stand for high points along the way.

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except that it has a slightly lower bass limit, 20 Hz instead of 31.5 Hz as on the BASF tape. The response was essentially identical with both tapes and among the flattest we have yet measured from a cassette deck: +2, -0.5 dB from 31.5 to 18,000 Hz with the BASF tape and +2, -0.5 dB from 20 to 18,000 Hz with the A-BEX tape. The BASF 70- μ s test tape, for chrome and metal equalization, yielded an even flatter response: ± 0.5 dB from 31.5 to 18,000 Hz.

The reference tapes used by Kenwood to establish the KX-780's specifications are listed in the manual as TDK AD (normal), TDK SA (CrO₂-type), and TDK MA (metal), all in C-60 lengths. As is our policy

The Kenwood KX-780's playback frequency response was among the flattest we have yet measured from a cassette deck: ± 0.5 dB from 31.5 Hz to 18 kHz with the BASF 70-microsecond test tape.

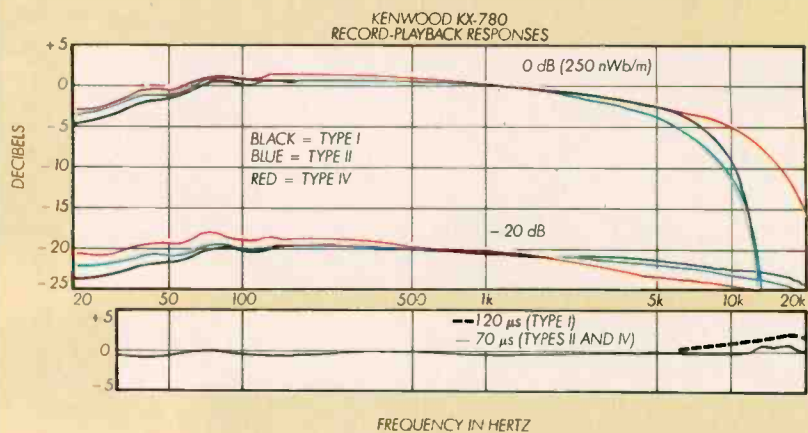
whenever a manufacturer supplies such information, we used these tapes for our tests. Initially, we made all our measurements with the bias-adjustment control set to its detented center position, presumably the correct setting for these tapes.

All three tapes showed the same general response characteristics at -20 dB (referred to a 250-nWb/m recording level), with a smooth high-frequency rolloff beginning at about 3,000 Hz that dropped the output by 5 to 6 dB at 20,000 Hz. The low-frequency response typically sloped downward slightly, though less steeply than the highs, and showed only slight head-contour ripples. Referred to the 315-Hz output, the response from 20 to 20,000 Hz was +0, -6 dB with TDK AD, +0.5, -6.5 dB with TDK SA, and +1, -7.5 dB with TDK MA.

The deck's high-frequency rolloff suggested the possibility of a slightly

FEATURES

- Separate record and playback heads in single housing
- Source/tape monitor switch with LED indicator
- Single d.c. electronically regulated motor
- Dolby B and Dolby C noise reduction
- Microprocessor-controlled, solenoid-operated transport
- Microphone and line inputs (not mixed)
- Stereo headphone output (for 8- to 16-ohm phones)
- Front-panel playback level control affects line and headphone outputs
- Dual recording-level control knobs
- Peak-reading LED level indicators
- Tape bias/equalization selector switch for Types I, II, and IV tapes
- Variable bias control
- Skip search moves tape rapidly in increments of 100 index-counter units
- Zero-stop memory tape rewind or fast forward
- Record-mute function with 4-second or longer silent interval inserted
- Quick rewind to start of recording
- Optional external-timer activation in record or play modes



HIRSCH-HOUCK LAB MEASUREMENTS

Fast-forward time (C-60): 80 seconds

Rewind time (C-60): 79 seconds

Speed error: +1.1% at start, +0.8% at end of C-60 tape

Dolby B tracking error: +0, -2.5 dB

Dolby C tracking error: +0, -3.8 dB

Wow-and-flutter: 0.047% JIS-weighted rms; $\pm 0.08\%$ CCIR-weighted peak

Line input for indicated 0 dB: 60 mV

Line output at indicated 0 dB: 230 mV (Type I tape)

Microphone input for 0 dB: 0.215 mV

Microphone input at overload: 30 mV

Meter indication at IEC-standard 0 dB: +3 dB

Tape: TDK AD (Type I, ferric)

IEC 0-dB distortion: 1.55%

Meter indication at 3% third-harmonic distortion: +6 dB

Signal-to-noise ratios (in decibels):

	Unwtd.	A-wtd.	CCIR
NR off	54	59	50
Dolby B	64.5	68.5	61
Dolby C	63.5	75	70

Tape: TDK SA (Type II, chrome-equivalent)

IEC 0-dB distortion: 1.3%

Meter indication at 3% third-harmonic distortion: +6 dB

Signal-to-noise ratios (decibels):

	Unwtd.	A-wtd.	CCIR
NR off	56.3	60	51
Dolby B	63	69.3	62
Dolby C	65	76.8	70


Tape: TDK MA (Type IV, metal)

IEC 0-dB distortion: 1.25%

Meter indication at 3% third-harmonic distortion: +6 dB

Signal-to-noise ratios (decibels):

	Unwtd.	A-wtd.	CCIR
NR off	55.5	59.5	51
Dolby B	62	69	63
Dolby C	64	77.5	72.5



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Motion Picture
Sound Designer/Musician
Credits: *Titanic*, *Star Trek I*
and *III*, *Brainstorm*,
Ice Pirates

Steve Gilbard—
Concert Sound Engineer,
Tasco Sound Ltd.
Credits: *Madonna*

Ian Eales
Recording Engineer
Studio City Sound
Credits: *Al Jolson*,
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high bias level, so we remeasured the response of each tape with the bias set to its minimum value. The greatest improvement was with the AD tape, whose response was then flat within ± 1 dB from 65 to 19,000 Hz. The other two tapes were not improved nearly as much by the bias reduction. We also made the same measurements with another Type I tape, BASF Pro I Super, with results very similar to those from the TDK AD. It was apparent that the KX-780 gave its best frequency

Once we mastered the unusual tape-transport and recording controls, the Kenwood KX-780 impressed us with its ease of operation and functional layout. The skip-search and quick-rerecord features are truly useful innovations.

response with a Type I (normal or ferric) tape using the minimum bias setting.

Dolby tracking was evaluated by measuring the record-playback frequency response with the flattest tape, TDK AD, at levels from 0 to -40 dB and with the Dolby system on and off. Ideally there should be no difference between the response with and without the Dolby system, but any internal level mismatching or departure from flatness in the recorder's inherent response is magnified by the noise reducer's compensating action. With Dolby B, the maximum error was -2.5 dB at 5,000 Hz and -30 dB. Because of its greater noise-reducing effect, the error with Dolby C was -3.8 dB from 4,000 to 8,000 Hz and at levels of -30 to -40 dB.

Comments

Once we mastered the unusual tape-transport and recording controls, the Kenwood KX-780 impressed us with its ease of operation and functional layout. The deck's vertical LED peak-level indicators are easier to read than the usual horizontal ones, and the LED tape-monitor indicator is also a nice

touch. Moreover, the KX-780's skip-search and quick-rerecord features are truly useful innovations.

The unusual record-playback frequency response we measured from the KX-780 led us to try recording interstation FM-tuner hiss, at a -10-dB level, and comparing the playback to the source as we varied the bias-adjustment control. While the control's effects were audible, they were relatively minor. Although at no time was the tuner hiss reproduced exactly, which is a rather difficult task for any cassette deck, the differences seemed to be at least as much in the lower and middle ranges as in the highs.

The KX-780 did a creditable job of recording and reproducing FM broadcasts and LP records, generally with no audible signs of its measured response errors. Nor did we hear any ill effects from the operation of the Dolby systems, which seemed to perform just as they were meant to. When we listened through medium-impedance (200- to 600-ohm) headphones, however, we found the maximum volume quite low. Although the deck's specifications call for 8- to 16-ohm phones, most current models have a much higher impedance.

We were able to verify the reality of the very flat playback response we had measured on this machine with an A/B playback comparison between a high-quality prerecorded cassette and a CD made from the same master tape, Sheffield's "Crème de la Crème." The metal-tape cassette, from the Nakamichi Reference series, was dubbed in real time from the master tape using Dolby C noise reduction. The similarity between the two versions was quite remarkable, and without an A/B comparison it would have been almost impossible to tell them apart. The highest frequencies, especially in the percussive sounds of triangles and wire brushes, were slightly though audibly duller in the cassette version. At fairly loud volumes there was no difference in noise level (we didn't hear any from either source), and we never heard any type of distortion or dynamic misbehavior.

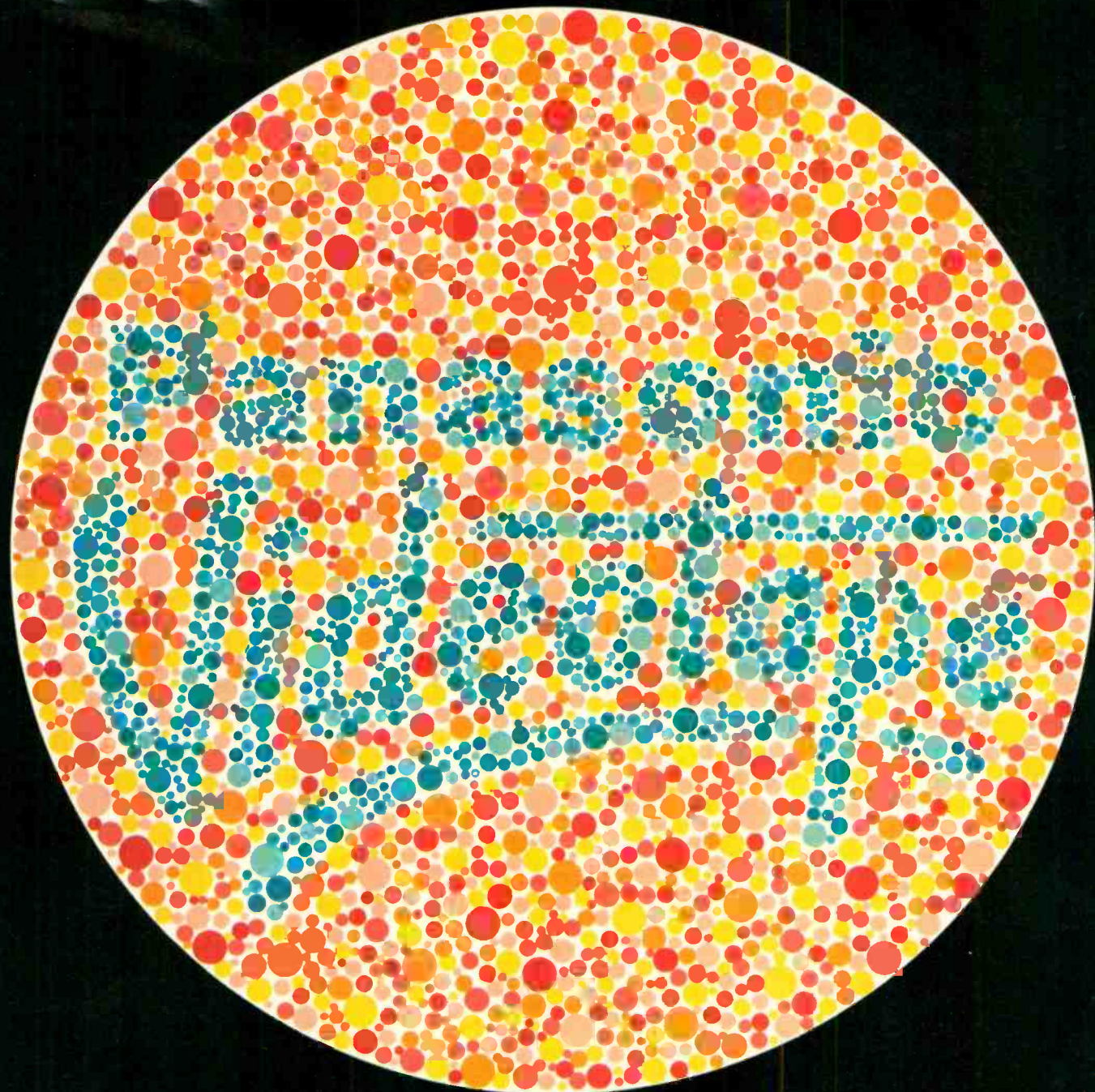
The comparison gave most convincing evidence of the Kenwood KX-780's overall high playback quality. When you add in its three-head design and useful new features, it begins to seem like a lot of cassette deck for the money.

Circle 142 on reader service card



"Dear Miriam,

Things here are not getting any better! Although Warden Nichols promised to expand the Compact Disc library, a month has passed and there are still only twenty-two titles represented, and five of those are by Von Karajan, and you know how I simply cannot abide his Beethoven interpretations. . . ."



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CANTON KARAT 300 SPEAKER SYSTEM

Julian Hirsch, Hirsch-Houck Laboratories

THE Canton Karat 300 is a three-way bookshelf system whose 10-inch long-throw woofer crosses over to a 1½-inch dome midrange driver at 800 Hz. At 4,000 Hz there is a second crossover, to a 1-inch dome tweeter. The sealed wooden cabinet is available in walnut, black, or white, and the removable perforated-metal grille is finished to match the cabinet. There are no user-adjustable controls, and the heavy-duty plastic spring-loaded connectors are recessed flush with the rear of the cabinet.

The Karat 300 has a rated sensitivity of 89 dB sound-pressure level (SPL) at 1 meter with a 1-watt input, and it is recommended for use with amplifiers rated up to 100 watts output in rooms of up to 1,600 cubic feet. The speakers can be installed either vertically or horizontally. The cabinet measures about 19¾ inches high, 12¼ inches wide, and 11½ inches deep, and each system weighs 33 pounds.

Price: \$800 per pair. Canton North America, Dept. SR, 254 First Ave. N., Minneapolis, MN 55401.

Lab Tests

We installed the Canton Karat 300 speakers against a wall on a ledge about 27 inches from the floor, which is essentially the placement recommended in the instruction booklet. In listening tests we preferred the wall placement over free-standing pedestal mounting. The averaged room response from the two speakers was exceptionally uniform, varying only 6 dB overall from 100 to 18,000 Hz. A major room resonance produced a peak at about 60 Hz, but there was less irregularity in the mid and upper bass than we have usually measured in this room.

Our close-miked woofer-response measurement yielded a broad maximum output from 70 to 150 Hz. The output fell at 12 dB per octave below 60 Hz and at about 3 dB per octave from 150 to 800 Hz. When

this bass curve was spliced to the room-response curve, the overall composite frequency response was within 7 dB from 50 to 20,000 Hz. Quasi-anechoic FFT frequency-response measurements, made on axis at a distance of 1 meter, showed about the same variation from 180 to 23,000 Hz except for a dip between 2,000 and 3,000 Hz that appeared to be a cancellation effect between the two higher-frequency drivers (it did not appear in the room curve or at most angles off the speaker's axis).

Response curves made on axis and 45 degrees off axis began to diverge above about 7,000 Hz and more rapidly above 10,000 Hz. This effect suggests that the dispersion of the dome tweeter was not quite as wide as it might have been, possibly because the metal grille interfered more as the off-axis angle increased. The phase linearity of the system was very good, with a group-delay variation of less than ±0.2 millisecond from 2,000 to 20,000 Hz.

The impedance of the Karat 300 measured 7.5 ohms in the range from 110 to 170 Hz, confirming its nominal 8-ohm rating. Impedance reached a maximum of 25 ohms at the 62-Hz bass resonance, measured 20 ohms at about 1,200 Hz, and fell to 7 ohms between 10,000 and 20,000 Hz. The system sensitivity at 1,000 Hz was 88 dB SPL at 1 meter with an input of 2.83 volts. We used a drive level of 3.5 volts, corresponding to our standard 90-dB reference level, for woofer-distortion measurements. The distortion was less than 2 percent from 100 to 40 Hz and only 5.8 percent at 25 Hz.

The Karat 300 demonstrated ex-

Alternative white and black finishes



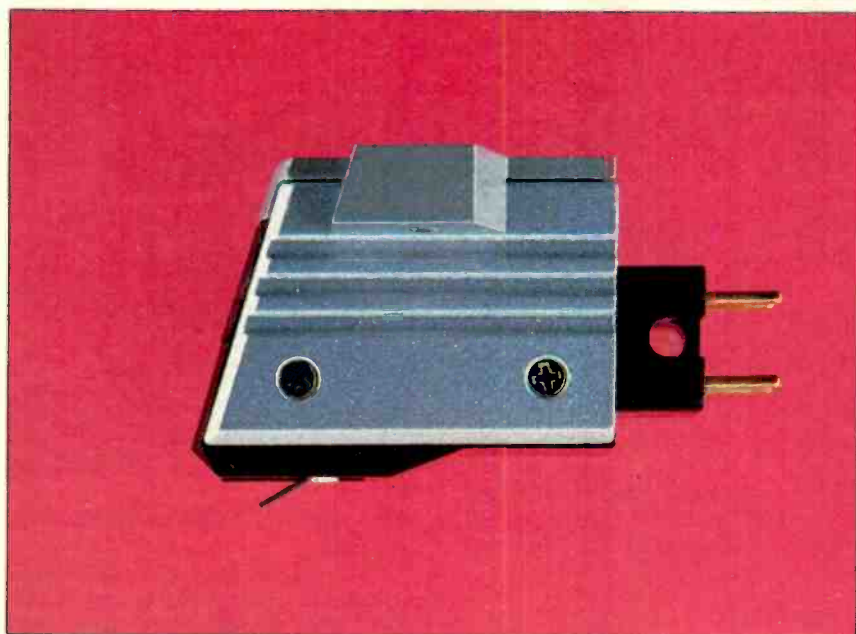
cellent power-handling ability. With single-cycle tone bursts at 100 Hz, the woofer began to distort smoothly at about 400 watts input, but it did not become audibly raspy at the amplifier's maximum output of 1,055 watts into the speaker's 8-ohm impedance. We used 1,000-Hz tone bursts for the midrange test, reaching 660 watts into the 20-ohm speaker impedance without major distortion, though the single-cycle bursts did begin to sound "hard" at that level. Finally, the dome tweeter had no problem reproducing 10,000-Hz tone bursts at the amplifier's maximum of 1,080 watts into 7 ohms. Obviously, the Karat 300 can handle just about all the power anyone is likely to deliver to it without undue audible distortion or physical damage.

Comments

The sound of the Canton Karat 300 lived up to the promise of its measured performance. Overall, the sound was well balanced, most of the time without audible emphasis of any part of the audible spectrum. Compared with some other speakers, the extended high end of the Karat 300 imparted a sense of greater definition to music, but without any tendency toward over-brightness. The bass sound was surprising, seeming to be much deeper than our measurements indicated. In part this was due to the speaker's strong output in the 100-Hz region, which can suggest a low-bass content that is not really present. However, we also heard (and felt) enough deep bass at various times to confirm that the Karat 300 has a healthy, relatively undistorted output far below its 60-Hz resonance frequency.

Encouraged by its showing in our peak-power tests and by the availability of high-powered amplifiers, we drove the Karat 300 to possibly risky output levels, using wide-range CD's as the source. The results were most gratifying—the speakers retained their open, uncompressed sound even under the most extreme conditions. In today's market, the Canton Karat 300 is a moderate-priced speaker, but it delivers much more than moderate performance.

Circle 143 on reader service card



AZDEN GM-P5L MOVING-COIL CARTRIDGE

Julian Hirsch, Hirsch-Houck Laboratories

ALTHOUGH Azden may not be a familiar name to American audiophiles, it is well known to amateur radio operators (including myself), who have been using Azden high-frequency and VHF transceivers for some years. Azden is a brand name of Japan Piezo Corporation, which recently entered the U.S. hi-fi market with a high-quality P-mount moving-coil phono cartridge, the GM-P5L.

Like most moving-coil cartridges, the Azden GM-P5L has a non-replaceable stylus. The diamond tip has a line-contact shape and is mounted on a boron cantilever. This is a moderately low-output cartridge, rated to deliver 0.2 millivolt (mV) at 5 cm/s velocity. Physically it is effectively a universal-mounting cartridge despite its P-mount designation. At first glance it even appears to be a conventional cartridge with standard 1/2-inch mounting centers, and, in fact, it can be used as one (as we used it for our tests).

To use the GM-P5L in a P-mount arm, the mounting base is un-

screwed and the cartridge is plugged directly into the arm. Its weight and dimensions conform to P-mount standards, so that it will automatically track at a vertical force of 1.25 ± 0.25 grams in a suitable arm. Of course, in a conventional arm tracking force must be set manually as part of the installation procedure. An adaptor with extension leads is furnished for use in headshells whose leads are too short to reach the cartridge pins.

Azden states that the GM-P5L uses a high-energy samarium-cobalt

The GM-P5L's frequency response was flat within ± 0.5 dB up to about 9,000 Hz and rose smoothly to $+4.5$ dB at 20,000 Hz.

magnet and that the rigid, light boron cantilever has a "one-point" support to position the stylus accurately during playing. The polished, square-shank diamond stylus (0.1

TEST REPORTS

mm on a side) is nude mounted to the cantilever to keep the moving mass at a minimum.

The cartridge's specifications include an impedance of 10 ohms (resistive) at 1,000 Hz, a frequency response of 10 to 60,000 Hz (tolerance and test records are not specified), channel separation of 30 dB at 1,000 Hz, and channel levels matched within 0.5 dB. The cartridge has a rated vertical tracking angle of 20 degrees, and it should be loaded with 40 ohms (or more) and a nominal capacitance of 100 to 300 picofarads. In its P-mount format, it weighs 5.9 grams, which is increased to 8.8 grams when the universal mounting base is attached. Price: \$250. Azden Corp., Dept. SR, 147 New Hyde Park Rd., Franklin Square, NY 11010.

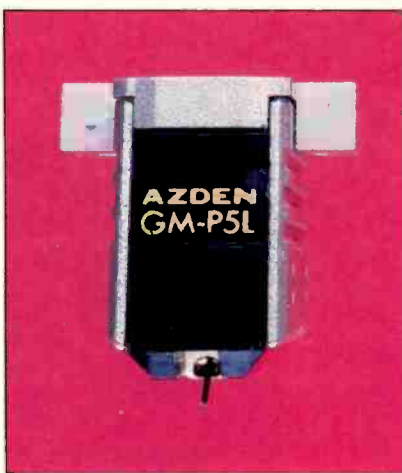
Lab Tests

We installed the Azden GM-P5L as a conventional (not P-mount) cartridge in the tone arm of a good medium-priced record player. Its output was measured through a high-quality moving-coil step-up transformer. We operated the cartridge at a tracking force of 1.5 grams. Although it worked well at 1.25 grams, almost every cartridge gives its best performance when operated at its maximum rated force.

The cartridge output measured 0.365 mV at 3.54 cm/s velocity, and the channel levels were matched within 0.25 dB. Our high-velocity

Like many moving-coil cartridges, the Azden GM-P5L has a strong top end. It tracks very well, coping with high recorded velocities better than many other highly regarded moving-coil cartridges.

test records were tracked satisfactorily at 1.5 grams, including the 70-micrometer level of the German HiFi #2 record. A 1,000-Hz square wave from the CBS STR 112 record was reproduced very well, with only 1 cycle of overshoot and a moderate low-level ringing at 30 to 40 kHz



(the latter is inherent in the test record).

The high-frequency tone-burst distortion (using the Shure TTR-103 test record) was somewhat greater than we have measured from many cartridges, with readings of 1.8 to 3.2 percent over the range of 15 to 30 cm/s velocity. However, the correlation of this measurement to audible qualities has not been clearly established. The vertical stylus tracking angle was 20 degrees, as rated.

We measured the frequency response of the Azden GM-P5L with the CBS STR 100 test record. The results were very close to those Azden obtained from the same test sample. The frequency response was quite flat (within ± 0.5 dB) up to about 9,000 Hz, and the output rose smoothly from there to 20,000 Hz, where it was about +4.5 dB (and was evidently still rising at that frequency). Although the crosstalk response of the two channels differed somewhat through much of the midrange, the average channel separation was 25 to 27 dB from 500 to over 10,000 Hz and still a strong 17 to 18 dB at 20,000 Hz.

Comments

The Azden GM-P5L provides all the advantages of the P-mount format, including the total elimination of user setup adjustments (just plug it in and start playing) and a relatively low effective arm mass. When used as a conventionally mounted cartridge, it is somewhat heavier than most and may require an additional balance weight on

some arms (it did on ours). Both of these factors tend to lower the resonant frequency of the arm and cartridge, but, fortunately, the stylus compliance of the GM-P5L is not excessively high, and in most cases the low resonance should pose no problems.

We also found that the GM-P5L's mounting pins were considerably too small in diameter for the clips in the tone arm we used, requiring some squeezing with pliers to obtain a reliable fit. On the other hand, since as far as we know there is no accepted standard for mounting-pin dimensions, it might be more accurate to say that the clips in our tone arm were too large.

The GM-P5L had many of the typical characteristics of a moving-coil (MC) cartridge. As its frequency-response curve suggests, like many other MC cartridges it has a strong top end, which can be either a plus or a minus. If you use this cartridge to play a record with very strong high-frequency content through speakers with a rising high-end response, the resulting sound can be rather overbearing at times; a slight cut of the treble tone control would solve the problem nicely. If your speakers roll off the high frequencies somewhat, however, the GM-P5L will add clarity and detail to the music.

The Azden GM-P5L tracks very well, coping with high recorded velocities better than many other highly regarded moving-coil cartridges. Like other MC cartridges, it is unaffected by wide variations in load resistance or by almost any capacitance one is likely to encounter. Although its output is low enough to require the use of a step-up transformer or pre-amplifier, the output is by no means as low as that of some MC cartridges. It is not likely to degrade your system's noise level or call for heroic measures to prevent such degradation.

In general, we found the sound of the Azden GM-P5L to be clean and well-defined, with a low background noise level. Its slight tendency toward crispness was generally beneficial to the sound. It is certainly worthy of consideration in its price range, especially if you plan to use it in a P-mount tone arm.

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HOW TO CHOOSE THE RIGHT TAPE

*Different cassettes suit different decks, and
the music makes its own demands*
by Craig Stark



MOST people probably think more about which tie matches their suit and the occasion than about which cassette tape best suits their deck and the music they want to record. Certain colors and patterns go together others don't. The same goes for matching tapes, decks, and recording jobs.

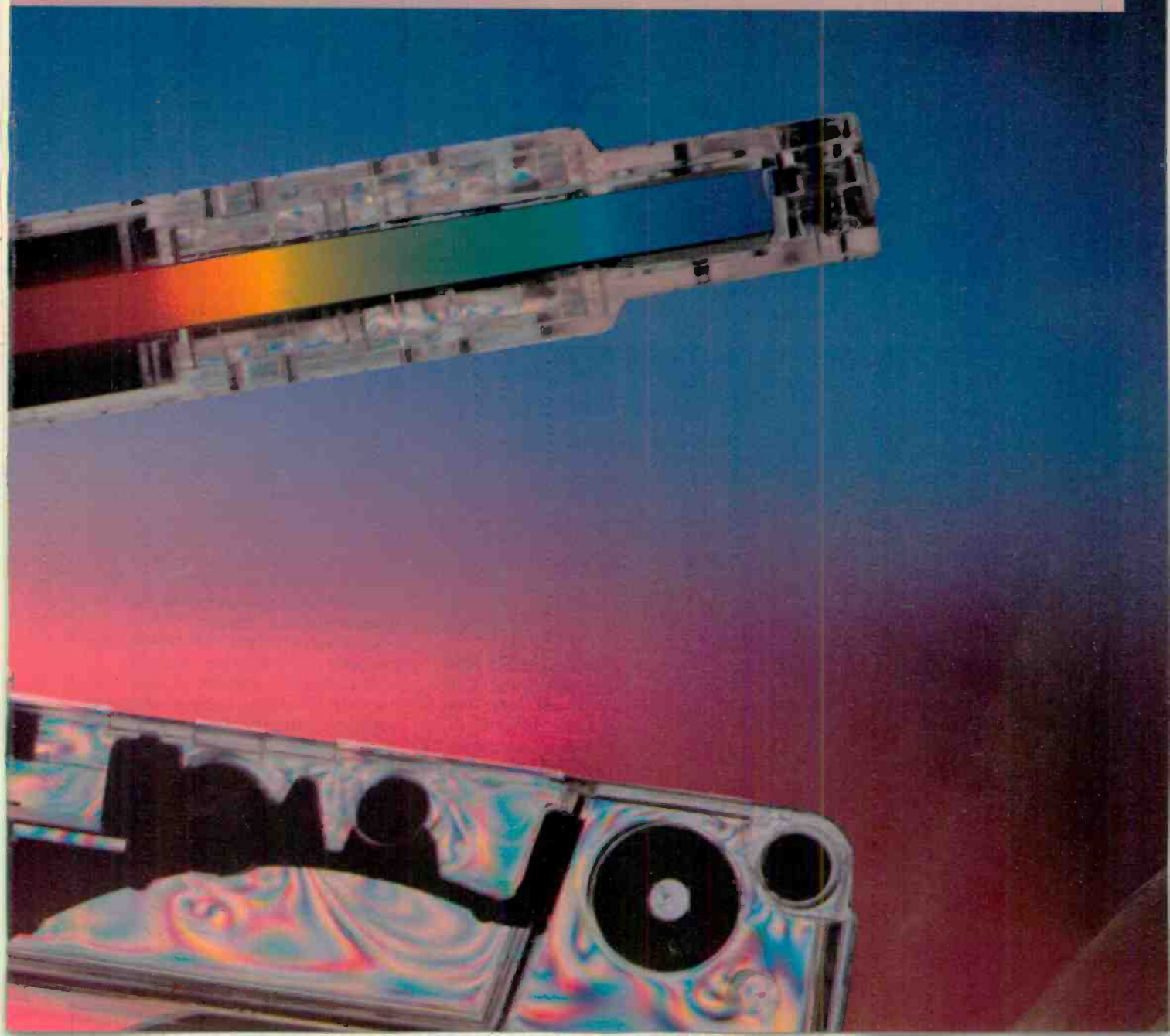
Some tape-selection rules are as hard and fast as not mixing stripes with plaids. Above all, avoid cheap, unbranded tapes, where price rather than quality is paramount. They aren't even worth what little you pay for them. Sooner or later such cassettes will bring you grief: either the tape will shed too much oxide (leaving a brown band on your

deck's pinch-roller), or it will get wrapped around the capstan, or the hubs will jam. Or you may even find that a cassette was wound at the factory with the wrong side of the tape facing out!

On the other hand, for speech recordings, a mid-priced or even low-priced standard Type I ferric-oxide cassette (I'll discuss tape types more fully below) from a reputable manufacturer will do perfectly well. You should pay more for a premium grade only if you want to keep the recording for a long time, as with Baby's first words or Granny's reminiscences. For music that has a large treble content or a wide dynamic range (electronic music, symphonies with struck gongs, jazz, and

so on), most people will choose a Type II "chrome" tape, though today these really offer no demonstrable advantage over top-quality ferrics. Rock enthusiasts, on the other hand, are likely to assume (again, for reasons that are no longer valid) that a high-grade Type I tape has more bass sensitivity than a chrome-equivalent type. At the premium-quality level, however, today's Type I and Type II tapes perform equally well.

Where your demand for high fidelity is greatest, as when you want to record from a Compact Disc, Type IV metal cassettes are worth their extra cost. They offer both a greater treble storage capacity, which CD dubs need, and a general-



THE RIGHT TAPE

ly higher signal-to-noise ratio. The alternative here might be one of the new "Type II" tapes that actually use a modified Type IV metal-particle coating. Because these tend to require somewhat more record bias than typical Type II tapes do, though much less than regular metal tapes, you'll have to experiment to see whether they are really compatible with your deck. If your recorder has user-adjustable bias controls you'll be able to compensate for the different requirements.

The Tale of the Tapes

Useful as such summary guidelines may be, you'll probably find shopping for cassettes considerably easier if you learn a little about the basic tape types and the often-confusing terms used to identify them.

Ferric oxide (Fe_2O_3) is the magnetic "active ingredient" in the vast majority of all cassette tapes in use throughout the world today. Logically enough, then, ferric cassettes were designated as Type I by the International Electrotechnical Commission (IEC). Type I cassettes are available in many different quality levels, ranging in price from the unbranded three-for-a-dollar variety, through a medium grade (often called "low noise" or LN), to expensive premium formulations. Ferric tapes are often labeled or referred to as "standard-bias," "normal-bias," or "low-bias" cassettes. Actually, the amount of bias current required for optimum recording varies somewhat among different ferric-oxide cassettes, but the range of variation is small enough to justify calling all ferric-oxide cassettes "standard bias."

Still another designation for standard ferric-oxide tapes is "120-microsecond" (120- μs) cassettes. This engineering term refers to the amount of equalization (frequency-response modification) the tapes need during playback. With 120- μs equalization, the circuitry (including the tape head) inside your deck adds a standardized amount of treble boost during playback; the boost begins at a frequency of 1,326 Hz and increases as the frequency goes up. While playback equalization is

necessary to achieve a proper overall frequency response, the portion that results in a treble boost during playback is undesirable since it emphasizes residual tape hiss as well as the musical high frequencies.

Type II tapes are based on a different magnetic material—or, rather, two different materials. Originally, these tapes were all made from chromium dioxide (CrO_2), which is still used by BASF and other European manufacturers. The Japanese, however, found that by modifying the molecular structure of regular ferric-oxide crystals to include a carefully controlled amount of cobalt, a "chrome-equivalent" tape could be produced. Today, most so-called "chrome" Type II tapes are actually made of this ferricobalt material. Indeed, a very much smaller amount of molecularly bonded cobalt is currently also being used in some premium-grade Type I tapes.

As a class, Type II cassettes require about 50 percent more bias current than Type I cassettes do. For this reason they are also called "high-bias" tapes. Occasionally, the more scientifically descriptive term "high coercivity" is applied to them, because it directly refers to their intrinsic advantage over ferrics. During recording, a varying pattern of magnetic polarities is imposed on the particles in the tape according to the variations in the musical signal. If some particles come under the influence of the magnetic fields of neighboring particles and change their polarities, the recorded pattern is destroyed. That is exactly the same as saying that the desired signal is erased.

Coercivity might be called the property of resisting erasure. A high-coercivity particle is more tenacious in holding onto an assigned magnetic polarity than a low-coercivity particle. Coercivity becomes especially important when you want to record high frequencies at slow tape speeds. At the cassette speed of $1\frac{7}{8}$ inches per second, for example, each complete cycle in an 18,750-Hz tone recorded on the tape is physically separated from the next by only 0.0001 inch. In such cramped quarters low-coercivity



BARNABY HALL

THE RIGHT TAPE

particles tend to lose their assigned magnetic polarities, accommodating to their neighbor's strongly held magnetic opinions rather than to those the record head tried to establish. The result is at least partial treble self-erasure. The higher coercivity of Type II tapes makes them more resistant to this kind of treble loss than their Type I counterparts. Thus, chrome or chrome-equivalent tapes have an advantage in storing high frequencies at slow speeds.

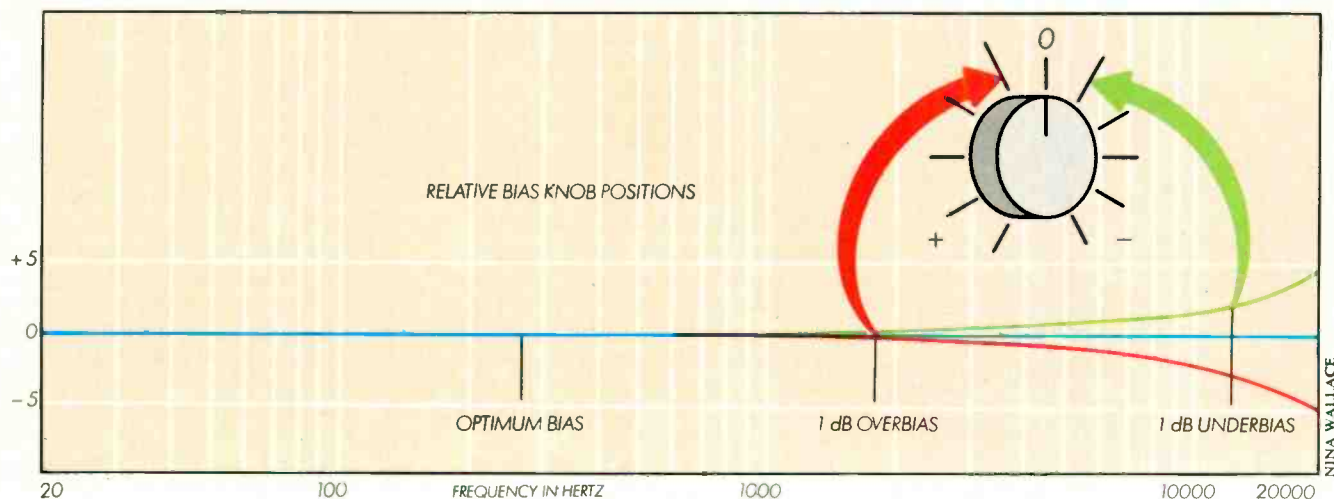
When chrome cassettes were first

tape, however, improvements in premium-quality Type I tapes have narrowed the performance gap to the vanishing point. Yet Type II cassettes are still the almost reflexive choice for recording music that has a high treble content and a wide dynamic range.

Though still popular abroad, IEC Type III cassettes, known as *ferrichrome*, are no longer generally available in this country. Ferrichrome tapes have two layers of magnetic coating: a relatively thick

obvious. This superiority is largely a result of metal tape's extremely high coercivity, which is predictably accompanied by a proportionate increase in the bias current required for recording.

Metal tapes use the same 70-microsecond playback equalization as Type II cassettes. Thus, their increased treble potential is not "spent" on achieving lower background noise. In general, however, they do achieve higher signal-to-noise ratios than the other formula-



introduced, a question arose about how best to make use of their markedly superior treble capacity. Those were the days before Dolby B noise reduction, and while the high-frequency response of ferric cassettes was bad, their hiss level was even worse. So it was decided to trade much of the new treble potential of CrO₂ for less background noise by lowering the playback equalization for chrome tape from 120 microseconds to 70 microseconds, thereby lowering the overall treble boost used during playback by roughly 5 dB. Since any treble boost used during playback accentuates residual tape hiss, the immediate effect of using less treble boost on chrome tapes was dramatically quieter recordings with no more treble deficiency than was (then) normal.

Since the introduction of chrome

layer of ferric oxide on the bottom and a thin second layer of CrO₂ on top. The combination is attractive in theory, but it proved hard in practice to equalize Type III tapes for flat response, and they required additional bias and equalization switch provisions manufacturers were reluctant to support. R.I.P.

Today's best-performing cassettes are IEC Type IV, which are made from a stabilized iron alloy rather than from an oxide of iron or chrome. (Pure, unalloyed iron particles oxidize so rapidly when exposed to air that they spontaneously burst into flame!) If you examine record-playback frequency response at the 0-dB level for cassette decks in STEREO REVIEW's Hirsch-Houck Labs test reports, the superior treble performance of metal tape over either Type I or Type II is very

tions. For the kind of high-level, high-frequency musical signals found on Compact Discs, metal cassettes are far and away the obvious choice. A higher price is their only drawback.

Matching Tape and Machine

As indicated earlier, while most people's cassette requirements can be adequately met by a suitable tape from a reputable manufacturer, for the really critical audiophile additional considerations come into play. There are brand-to-brand differences among cassettes of the same basic type, for example. And to make matters still more confusing, the brand that works best on your deck may not work best on your neighbor's.

Every tape recorder has a number of internal controls (bias level, re-

THE RIGHT TAPE



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cord equalization, playback equalization, meter calibration, Dolby drive level, to name a few) that must be adjusted as part of the manufacturing process. These setup adjustments must be made while using *specific* Type I, Type II, and Type IV tapes, and a manufacturer adjusts a deck for optimum performance with one specific brand. Consequently, these fixed adjustments will degrade to some degree the deck's frequency response, distortion, signal-to-noise ratio, Dolby tracking error, etc. with every *other* tape you use on it.

While brand-to-brand tape differences may be relatively slight, for the purist these differences loom large. Our Hirsch-Houck Labs test reports always disclose the specific tapes we use to make our test measurements. Unfortunately, recorder manufacturers only rarely make the same disclosure in their owner's manuals. How much you can reasonably do on your own to determine the optimum match between your deck and the specific cassettes available from your dealer depends to a large extent on the facilities your machine provides.

The human ear is a marvelous instrument for detecting very subtle differences in sound quality, but it's not very good at quantifying them, and for most people, at least, aural memory is very short. For this reason, a three-head tape deck, which allows you to switch instantly between the incoming signal and playback of the recorded result, is almost always the choice of the really dedicated recordist.

A number of decks, of course, provide user-adjustable bias controls. Such a feature certainly *is* necessary if you want to achieve optimum performance from tapes other than those the manufacturer used in setting up your deck. Bias current is the most critical electronic adjustment involved in recorder setup. But a user-adjustable control alone is not enough, as a look at the graph on page 57 will help make clear.

The three curves in the graph show the record-playback frequency response of the same tape (the new BASF LH-M1 ferric, Type I) at

three different bias levels. The ability to achieve the extraordinarily flat performance shown in the center curve—from 20 to 20,000 Hz ± 0.5 dB—is one reason Hirsch-Houck Labs uses the Nakamichi ZX-9 as a reference test deck. (When you measure tape you must make sure the measuring deck is not the limiting factor.)

The upper and lower curves show the effects of alternately lowering and raising the bias current by 1 dB. (We added bias-metering circuits to the Nakamichi deck so we could monitor the adjustment as well as its effects.) Coincidentally, the ± 5 -dB change in frequency response that resulted here from a small deliberate change in bias is about the range of variation you would expect to get from using different tapes on the same recorder without optimizing it for each one.

The question is whether, without a built-in test generator and measuring indicator (which the best decks with adjustable bias controls *do* provide), you can achieve enough accuracy by ear to make user-adjustable bias controls worthwhile. Frankly, with a two-head deck and without instruments I wouldn't even try—I'd probably end up with a frequency-response curve worse than any variation I'd find between tapes.

With a three-head deck, however, I've come close enough to convince me it's worth trying. And you can use a "test generator" nearly everyone has: an FM tuner. If you turn off the tuner's muting circuits and tune between stations (disconnect the antenna if you have trouble finding a quiet spot on the band), the hiss you'll get is about halfway between pink and white noise. If you record and play back the hiss at a very low level (-20 dB on your deck's indicators), adjusting the bias control until the source and recording sound identical, you can come fairly close to optimizing your machine for a particular tape.

You might not achieve a perfectly flat frequency-response curve when you adjust your cassette deck by ear, but if you're off by less than you can hear, you've achieved a reasonably good match. □



STEREO REVIEW SALUTES

TINA TURNER

by Chris Albertson



Photos: left, John Bellissimo/Renna Ltd.; right, Liberty Records

SOME are calling it a comeback, but that is not the right word to describe the current increased visibility of Tina Turner. One might more properly refer to it as an "emergence." After all, departure is

Her weapon is sex. She makes it all sound very healthy, very wholesome—and very urgent.

Peter Reilly, 1970

Ike and Tina get basic, back and beautiful. Funkier than a Mosquito's Tweeter is as hot as a plate of smothered pork chops and collard greens.

Rex Reed, 1971

Nobody makes a better animal sound than Tina, understand, but even a sex queen needs a change of pace now and then.

Nbc Coppage, 1972

Photos: Preceding page, left, Tina in Private Dancer; lower right, with Ike and the Ikettes in the early Sixties. Below, from left: with Ike in the early Seventies; same period, taking a solo; at the Ritz in New York City, summer of 1984; at this year's American Music Awards; in the current film *Mad Max: Beyond Thunderdome*; with Mick Jagger at the close of this summer's Live Aid concert in Philadelphia.

a prerequisite for coming "back," and Tina Turner, who this year can celebrate the twenty-fifth anniversary of her first hit recording, never really left us. What we have here is simply a change in direction—she has spread her wings to go it alone, and the flight has taken her straight to the top of the charts.

While the change is obviously just what the doctor ordered, one should not denigrate Tina Turner's past association with Ike and the Ikettes, her former husband and the mini-skirted threesome with whom she performed for so many years. Tina was the high-energy core of the Ike and Tina Turner Revue, whose format—a slightly trashy look, raucous sound, and enough suggestive movements to power a small tank—seemed designed to counteract the watercress sounds of the folk fad-dists and cut through the sticky sweetness of the middle-of-the-road set. It was a potent dose of unadulterated rhythm-and-blues in an era rife with pale imitations.

Tina—then Annie Mae Bullock—first tried to join Ike's Kings of Rhythm in 1954, but he did not hire her until 1957, and then only to sing with the band on weekends. The following year, she and Ike were mar-

ried, and when the scheduled singer failed to turn up for a 1960 recording session, Tina Turner stepped in and made her first hit record, *A Fool in Love*. A million-seller, it was followed by other hits, and success bred the Ike and Tina Turner Revue, complete with the Ikettes.

Despite enviable touring and recording schedules and a growing following, Tina at first failed to reach much beyond the rhythm-and-blues arena into the more lucrative white market. That changed in 1966 when the Turners met producer Phil Spector, whose so-called "wall of sound" reverberative approach combined with Ike's r-&-b style to produce one of Tina Turner's most memorable early tracks, *River Deep, Mountain High*. Grandiose and soulful, it hit the British charts at the No. 3 position and has since become one of Britain's ten all-time best-selling singles. It got to a disappointing No. 88 on the U.S. charts and held only briefly, however. The poor showing



United Artists Records

Liberty Records

Ira Cohen

is said to have driven Spector to early retirement. But the British success brought Tina Turner a new audience. In 1969, the Turners toured as the opening act for the Rolling Stones, a particularly memorable liaison for Tina, who still cites Mick Jagger as an inspiration.

The Ike and Tina Turner Revue built up steam in the late Sixties and was going full throttle by 1970 when STEREO REVIEW's Peter Reilly caught it in the Catskills. It was, Peter reported, "A wild, tearing show, a real live, professional act." Four years later, with albums on more labels than you could shake an Ikette's derriere at, the Turners—their band ironically renamed Family Vibes—parted ways.

Tina made a few solo albums after that, but basically she kept a low profile except for her highly charged portrayal of the Acid Queen in Ken Russell's film of the Who's rock opera *Tommy*, which also featured a guest appearance by Elton John. In 1981 she was heard by an estimated thirty-five million

viewers when she appeared with another Englishman, Rod Stewart, in a Los Angeles concert broadcast to twenty-four countries via satellite. Then, in quick succession, she accompanied the Rolling Stones on a U.S. tour and joined the British rock group Heaven 17 for an album track, *Ball of Confusion*. That collaboration led to her recording Al Green's 1972 hit *Let's Stay Together*, which quickly climbed into the Top 10 in England, caught the fancy of U.S. fans, and launched a sold-out European tour of seventy concerts.

Thus, England proved to be the springboard from which Tina Turner made her biggest splash, and the rest, as they say, is history: *What's Love Got to Do with It*, *Private Dancer*, three 1983 Grammys, high-budget videos and a starring role as the villainous Aunt Entity in the film *Mad Max: Beyond Thunderdome* with heart-throb Mel Gibson. She has come a long way from the Catskills, where Peter Reilly heard her fifteen years ago, not to mention

Her voice, technique, and spiritual savvy place her in a class with Bessie Smith and Ma Rainey.
Joel Vance, 1975

Tina Turner's *Acid Queen* is devastatingly erotic.
Steve Simels, 1975

She has burned her initials into the trunk of rock-and-roll.
Chris Albertson, 1984

Is there a more sensual woman on the face of the earth?
Alanna Nash, 1985

Brownsville, Tennessee, where she was born some thirty years earlier. Many performers can celebrate the twenty-fifth anniversary of their first hit, but not many can at the same time claim to be at the height of their careers. Tina Turner may soar higher still, but she has never sounded or looked better. □



Robin Kaplan/Retna Ltd.



Sam Emerson/Roger Davies Management, Inc.



Larry Busacca/Retna Ltd.

THE HI-FI VCR

A buyer's guide for audiophiles by Peter W. Mitchell



THANKS to efficient production methods and aggressive competition, prices of videocassette recorders have fallen to the level of many audio-only cassette recorders, making this an ideal time to join the thirty million American owners of VCR's. Even Beta Hi-Fi and VHS Hi-Fi VCR's, with their superior sonic performance, are available at attractive prices.

But the competition has a negative side: profit margins in VCR retailing have become so thin that

most dealers can't afford to educate customers (or even their own salespeople) about the differences in design, features, and performance that might lead you to prefer one VCR over another. Many stores don't even stock the manufacturers' brochures that you'd want to examine if you were comparison-shopping among the thirty brands and two-hundred-some available models. The first order of business, then, is to review some of the choices you might want to consider when selecting a hi-fi VCR.

Beta or VHS? Interesting machines are available in both formats. The Sony SL-HF900 (left) is a SuperBeta Hi-Fi VCR with a 181-channel MTS (stereo TV) tuner, wireless remote control, stereo-simulcast recording capability, programmable timer, and more for \$1,500. The Harman Kardon VCD-1900 is a VHS Hi-Fi VCR with a 105-channel MTS tuner, fourteen-day/four-event timer, two video and two audio heads, and wireless remote control for \$900.

Photos by Jonk Leung





Stereo Does Not Equal Hi-Fi

In VCR's, "hi-fi" always means stereo, but "stereo" does not always imply high fidelity. Beta Hi-Fi and VHS Hi-Fi use "audio FM" (AFM) techniques for recording wide-range stereo sound. The process is similar to that used in FM broadcasting, but with a difference: the FM signals are deposited directly on tape by the VCR's rapidly spinning head drum, together with the video signal, for later playback. And, unlike the multiplex system that is used in broadcasting to combine two channels of audio into one FM signal, hi-fi VCR's use separate FM frequencies for the left and right channels.

The audio-FM hi-fi system is virtually flutter-free, delivers consistently flat frequency response regardless of the brand and grade of tape used, and can accommodate a dy-

namic range of up to 75 or 80 decibels. In sound quality, a Beta Hi-Fi or VHS Hi-Fi recorder easily surpasses most audio-only cassette decks, and is in turn surpassed only by a digital recorder or by an optimally adjusted open-reel tape deck with dbx noise reduction. Consequently, a hi-fi VCR is not only a fine medium for recording the sound of televised concerts and for reproducing Dolby Stereo film soundtracks; it can also serve nicely as an audio-only stereo tape recorder. The long running time of a hi-fi VCR—two hours or more without interruption—makes it particularly valuable for taping live broadcasts of operas and full-length symphony or rock concerts, and even for on-location recording with microphones (using an external mike preamp or mixer to feed the VCR's line-level audio inputs).

All VCR's, hi-fi or not, have automatic level-setting circuits that free you from the bother of setting recording levels for off-the-air broadcasts. But if you want to use a hi-fi VCR as an audio-only stereo recorder, check to be sure that it also has *manual* recording-level controls, level meters, and a switch to bypass the auto-level circuit so that you can faithfully record the music's full dynamics.

Most hi-fi VCR's are equipped to do audio-only recording; they internally generate the 60-Hz control signal that is required for correct playback tracking (in normal video recording the control signal is obtained from the picture signal). Beware, however: a few hi-fi VCR's have been made without this capability, evidently being intended mainly for off-the-air TV recording and playing prerecorded tapes.



Beware also of VCR's labeled "stereo" without hi-fi sound quality. Case in point: VHS Stereo, with or without Dolby noise reduction. All VHS and Beta VCR's, hi-fi or not, record and play back a longitudinal or "linear" soundtrack along one edge of the tape using a small fixed head like that in an audio-only cassette recorder. The quality of this linear soundtrack is just good enough to reproduce ordinary TV sound. Typically, the low bass and high treble are rolled off, and some flutter may be audible. In VHS Stereo machines the linear soundtrack is divided into three narrow tracks, left and right channels with a guard band between them. This technique causes a 10-dB loss in signal-to-noise ratio, which is restored by Dolby noise reduction. VHS Stereo is better than mono, of course, but it falls far short of VHS Hi-Fi.

VHS or Beta?

The choice between the VHS and Beta formats depends on your priorities. How do you expect to use your VCR? How important are cost considerations?

□ *Beta is cheaper.* Beta Hi-Fi VCR's typically cost about \$200 less than VHS Hi-Fi machines with similar features, and blank two-hour Beta (L-500) tapes cost less than two-hour VHS (T-120) tapes. If you use the slowest running speed with each machine, the tape-cost advantage (figured in pennies-per-hour of recording) shifts to VHS, but audible dropouts are more prevalent at slower speeds and with the thinner tape formulations (L-750 and T-160). If you are serious about audio, you'll probably want to use two-hour tapes and the two-hour speed, giving the cost advantage back to

Hitachi's VT-88A (\$1.095) is typical of medium-priced hi-fi VCR's. It has three video and two hi-fi audio recording and playback heads, LED level indicators, switchable manual and automatic level controls, three tape speeds (SP, LP, and EP), a 105-channel cable-ready tuner, fourteen manually tuned programmable presets, a six-event, fourteen-day timer, and remote control.

Beta—and that applies even more if you're mainly going to use the VCR to time-shift TV programs.

□ If you plan to rent video tapes or swap with friends, *the wider availability of VHS tapes may be compelling.* In New York and Los Angeles, Beta and VHS are fiercely competitive; machines and tapes are generally available in both formats. But nationwide VHS machines outnumber Betas four to one, and in some parts of the country Beta is virtually nonexistent. Check

the local video stores, and find out what your friends have.

□ If you want to rent movie tapes with Dolby Stereo soundtracks, *there's a broader selection of movies in Beta Hi-Fi than in VHS Hi-Fi*, though the latter is gradually catching up. In any case, Beta's advantage in this area will be purely theoretical if the video stores in your area don't stock a full range of Beta tapes. Tempting listings in a catalog are no help if you can't get the tapes.

□ In theory, *VHS Hi-Fi can provide a slightly greater signal-to-noise ratio than Beta Hi-Fi*, but the difference between formats is smaller than the sample-to-sample differences among machines of either type. If you expect to use your hi-fi VCR solely as an audio recorder,

happen in 1986). But in order to take full advantage of SuperBeta's theoretically superior resolution, you may have to use costly premium-grade tapes, which add less video noise to the picture than standard-grade tapes do.

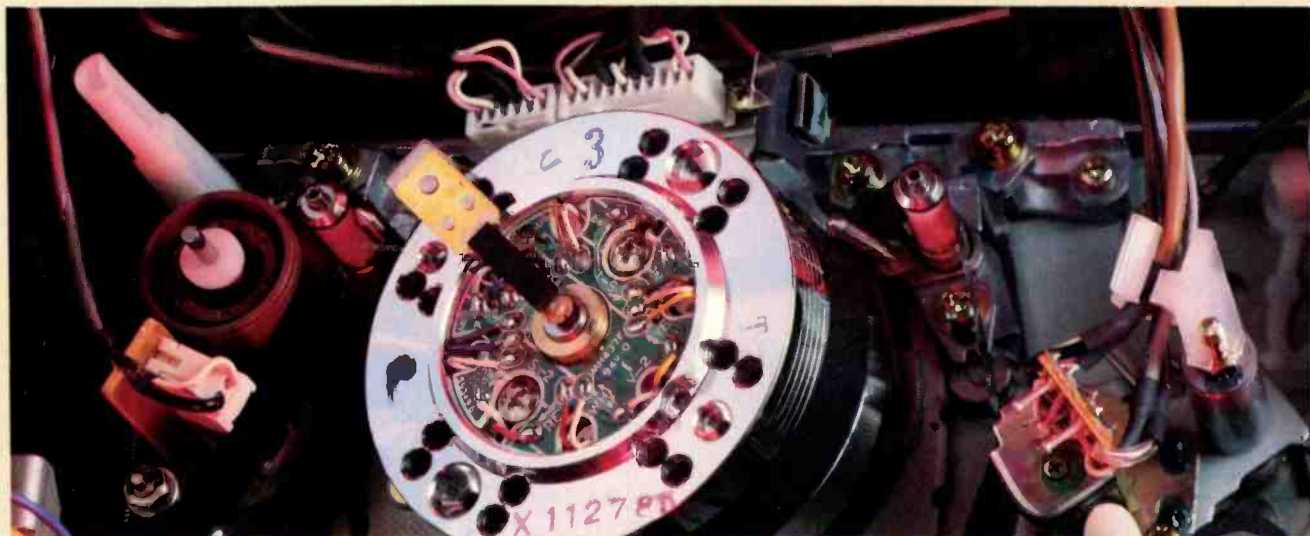
Convenience and Control

So far we have focused on VCR performance. In shopping for a VCR you also need an understanding of the specialized vocabulary manufacturers use, and you have choices to make among the control features that make it easier to make full use of a VCR's performance.

□ *Stereo-ready*. The meaning of this phrase may seem obvious to you and me, but in the video industry it does *not* guarantee that the VCR is ready to receive stereo TV

TV channels such as HBO, a converter will still be needed to tune those in.

A 105- or 139-channel tuning capability implies cable-readiness, but the convenience of that tuning depends on how it is done. Top-of-the-line VCR's have electronic digital tuning; you can select any channel directly by entering its number on a calculator-style keypad. But most mid-price VCR's have a semi-mechanical system with about a dozen pushbutton presets and a corresponding number of miniature tuning controls behind a panel. Each button can be pretuned to any channel, but in day-to-day operation you can conveniently select only as many channels as there are presets. Selecting any other channel involves retuning one of the presets,



The tape heads of the Hitachi VT-88A VHS Hi-Fi VCR: left, the full-tape erase head; center, the rotary drum with its two video heads, one video special-effects head, and two hi-fi audio heads; right, the linear audio and control-track heads.

you may as well base your choice on price and availability.

□ If your TV set is relatively new and produces a sharp picture, you may become sensitive to differences in picture quality among VCR's. Traditionally, *Beta VCR's have tended to provide slightly sharper pictures than VHS*, but here too the sample-to-sample differences are greater than the generic difference. Moreover, there is no guarantee that a high-priced VCR will deliver better picture quality than a mid-priced model. Often the extra heads and circuitry in a luxury VCR are used only to improve special-effects playback and operating flexibility.

The new SuperBeta format provides the best picture quality, at least until comparable Super-VHS machines come along (which may

broadcasts. Usually it means only that the VCR can record in stereo and that it has a socket to connect an external stereo-TV decoder.

The capability to receive and decode stereo TV sound is designated by either of two abbreviations: MTS (multichannel television sound) or BTSC (the Broadcast Television Sound Committee, which selected the present Zenith/dbx method of broadcasting stereo TV sound). *SAP*, the proposed "secondary audio program" signal for bilingual broadcasts, is part of the MTS standard for stereo but is often mentioned separately.

□ *Cable-ready*. This means that most cable channels can be tuned directly by the VCR's tuner, with no need for an external converter. But if your cable system scrambles pay-

usually a laborious process since the tiny tuning controls do not have click-stops or precise channel indications.

□ *Simulcast mode*. Ordinarily a VCR records either the video and audio from its built-in tuner or the video and audio from its line-level inputs. A simulcast switch allows a stereo VCR to record the video from its tuner together with an audio signal fed to its line inputs from an external source such as an FM tuner. In addition to the obvious use, taping TV/FM concert simulcasts, this capability is important if your local cable system creates its own FM simulcast for the wide-range stereo sound from HBO and the Movie Channel. It will become still more valuable if your cable system decides to create additional FM

simulcasts for stereo TV sound instead of providing new cable converters designed to pass TV stereo without impairment.

□ *Remote control.* Virtually every VCR comes with some sort of remote control. Many remotes are wireless; some are tethered to the VCR by a long wire that's less convenient but harder to lose. Low-cost remotes have only the playback controls (including special effects). Fancier remotes let you do just about everything at a distance, including programming the deck for timed recording.

□ *Special effects.* This category includes several ways of altering the playback of a tape: still-frame to freeze the picture and step forward or backward one frame at a time; slow-motion play at one or more

twenty-four hours. Others have multiday timers that will switch on to record, say, a soap opera at the same time every day for a week. The fanciest units can be programmed to capture up to eight programs on assorted channels over the next two to four weeks (if you have that much patience—and don't try to play back any tapes during the programmed period). To make this programming less confusing, some VCR's display the time/channel sequence on the TV screen while you are keying it in.

□ *OTR (one-touch recording).* Because you could wear out your programming finger setting the timer for the beginning and ending times of every program that you want to tape, most new VCR's have a one-touch (or "instant" or "ex-

problems that arise when a video tape is recorded on one machine and played on another. *Slow tracking*, on the other hand, helps to tune out the horizontal bands of interference that sometimes occur in special-effects playback.

□ *Memory rewind.* When this button is pressed, the tape will stop rewinding when the tape counter returns to 0000.

□ *Auto-rewind.* This control provides for automatic rewinding of the tape to the beginning when the end is reached.

□ *Audio dub.* With an audio-dub feature, you can record a new soundtrack that is not hi-fi without disturbing the video and hi-fi signals on the tape. Note: only the *linear* soundtrack can be replaced. Since hi-fi sound is recorded to-

COUNTING HEADS

EACH 525-line TV "frame" consists of two 262½-line "fields" whose lines are interleaved on the screen. As a minimum, every VCR has one pair of video heads located 180 degrees apart on opposite sides of the head drum, which rotates sixty times per second. During the first 180 degrees of drum rotation, one of these heads scans a diagonal track across the tape, recording the signal for Field A. During the second half-turn of the drum, the opposite head records Field B on an adjacent diagonal track.

In most Beta VCR's these two heads do the entire job. Beta Hi-Fi's FM carriers are combined with the video signal and recorded by the same heads. And since Beta's two tape speeds have a ratio of 1.5 to 1, only a slight compromise in video performance results from using a single pair of heads for

both speeds. A few Beta machines sport either three or four heads: one pair for recording and normal playback, with one or two additional heads to provide interference-free special effects (freeze-frame and slow motion).

Low-cost VHS machines also get by with just one pair of heads. But since this format spans a 3-to-1 range in tape speed, the use of just one pair of heads involves a more obvious compromise in performance. So the best-performing (and highest-priced) VHS decks from Hitachi, JVC, and RCA sport two pairs of video recording heads—one set optimized for the best resolution and signal-to-noise ratio at the 2-hour (SP) speed, the second pair optimized for slow-speed taping.

Confused yet? Here comes a curve ball: the four-head VHS machines from Panasonic and Quasar, like the four-

head Beta models, use a single pair of heads for recording at all speeds and a second pair for clean special effects in playback.

Now another curve ball: in VHS Hi-Fi the audio FM signals are recorded separately by a pair of audio-only heads located about 90 degrees away from the video heads on the spinning drum. So an economy-model VHS Hi-Fi deck would be another sort of "four-head" unit, one pair for video and one pair for audio. A high-performance VHS machine is likely to have six heads on its drum, four for video and two for audio.

Finally—so far—the top-performing models from Hitachi and RCA have a total of seven heads: two pairs for video recording at high and low speeds, a fifth video head for special effects, and a pair of heads for VHS Hi-Fi audio.

speeds; and, most valuable of all, "search," speeded-up silent playback that lets you zip through commercials. In a basic VCR, but not in a multihead luxury model, special-effects pictures may be jittery and contain broad bands of video noise and interference.

By the way, if special effects are important to you, note their limitations when comparison shopping. In many VCR's the special effects work only on tapes recorded at the slowest speed, and so they can't be used at all with prerecorded movie tapes (which are always duplicated at the fast two-hour speed).

□ *Programmed recording.* Even the simplest VCR's have one-day, one-event timing that will activate the recording mode once, on one channel, sometime during the next

press") recording button that advances the timer in half-hour increments.

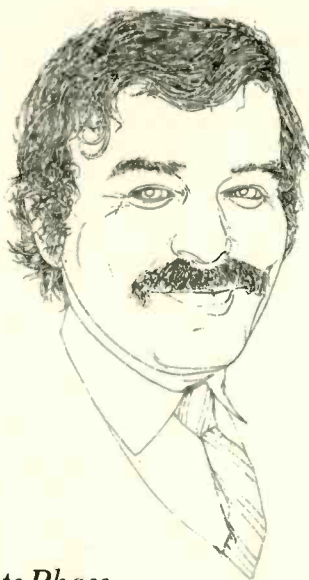
□ *Sharpness.* Like the detail control on some TV sets, this boosts the high video frequencies in playback to enhance the resolution of fine details, at the cost of also boosting grainy video noise in the picture. If the sharpness control worked during recording it wouldn't have this drawback, but that option is unavailable. My favorite method of sharpening off-the-air VCR tapes is to switch off the VCR's AFT (automatic fine-tuning) and manually fine-tune for the sharpest picture before recording. (But if you fine-tune too far you'll get interference patterns in the recorded picture.)

□ *Tracking.* This control helps to compensate for the compatibility

gether with the video by the spinning head drum, it cannot be replaced without erasing the picture. Audio dubbing is mainly used for adding narration or musical background to home-made video tapes. The reverse feature, *video dub*, lets you rerecord the video (and hi-fi sound) without altering the linear soundtrack.

As with most name-brand audio components today, selecting a hi-fi VCR that works well is not very difficult. Where you'll have to do some homework and shopping around is in deciding which features and capabilities are important to you and finding out how much you'll have to pay to get them. Then you'll be equipped to choose a machine that's not only a good performer but offers good value for *your* purposes. □

by Ralph Hodges



Absolute Phase

DISPATCHES from overseas serve notice that, like the demon from *The Exorcist*, the issue of absolute phase is walking abroad in the audio world again. All of us are due for another complicated time until it's either domesticated or stuffed into a bottle and thrown out to sea.

Absolute phase? Yes, as opposed to *relative* phase, which is the phase consideration we've rightly been taught to pay closest attention to. If the stereo image is swimmy and the bass insubstantial, we conclude (or hope) that one of the loudspeakers is out of phase *relative* to the other, and we hasten to reverse the connections to one of them (either one will do) to set things right.

If, however, we begin with speakers that are already in phase and decide, for the hell of it, to reverse connections to *both* speakers, we wind up with speakers that are still in phase relative to each other, but with an overall system that has had its *absolute* phase—its acoustic polarity, if you will—inverted. An input impulse that previously produced a compression (an outward lurch of the driver cones) now yields a rarefaction (an inward movement), and vice versa.

Big deal? Well, maybe, according to a growing number of high-end enthusiasts and recording-industry

people. Let's take a trumpet (okay, a B-flat valve trumpet, if you want to get picky), a microphone, and an oscilloscope and have a look. Logic suggests that the first thing to reach that microphone when the trumpet sounds will be a compression, making a compression the onset "signature" of the instrument. Continuing to peer at the scope during a steady trumpet blast, we note that the waveform is dramatically asymmetrical, characterized by a violent periodic spike that occurs on one side—and one side only—of the horizontal zero axis. We're not in an ideal position to say whether the spike represents a compression or a rarefaction, but it is definitely one or the other, never both. (We are, however, in a good position to tamper a little with that spike, to find that even mildly clipping it rapidly alters the timbre of the reproduced instrument.)

We make a recording of these proceedings, take it home, and play it on a system that happens to invert absolute phase (which can happen easily; the recorder itself might even do it) so that compressions become rarefactions and vice versa. What do we hear? Nothing too terrible, but, according to the faithful, nothing as likable as it would be if we simply reversed the connections to the two speakers to achieve absolute-phase integrity.

Judging from what I've read and been told, the faithful associate two worthwhile sonic improvements with correct absolute phase: superior stereo imaging and more forceful, palpable transient reproduction. They are quick to point out, however, that many recordings, particularly those made with multi-mike techniques, can't be said to have any absolute phase to begin with, and in such cases reversing speaker connections all day long will gain you nothing but exercise. It's "minimalist" recordings, made with a small number of carefully chosen and placed microphones, that show the phenomenon up best, and many minimalist recording practitioners are becoming extremely conscious of it.

Here's what Jerry Bruck of Post-horn Recordings says: "My eyes were opened when someone proposed to demonstrate absolute

phase to me using my own records. As it happened, I couldn't be certain as to what absolute phase these records actually had, because they were made without my paying deliberate attention to the matter. But, no question, I certainly preferred them played back with one polarity as opposed to the other."

Bruck's provocative statement raises a vital question: Is phase/polarity integrity maintained during the production of a commercial recording (which is to say, from microphone through console to mastering)? "Don't know" is the answer you'll get from most experienced recording engineers. John Woram of Woram Audio Associates says, "There's no reason why consoles and outboard processors shouldn't be noninverting if the designers thought it was an important consideration. But *did* they think it was an important consideration?"

And *is* it, in the end, an important consideration? The jury remains out for the time being, but its decision is eagerly awaited. A respected colleague of mine argues that a recording should sound different when speaker polarity is inverted because speaker drivers tend to behave more linearly when moving in one direction than in the other. As a corollary, it might be anticipated that a poor driver would be more revealing of the consequences of phase inversion than a good one. This argument, a perfectly rational one, implies that absolute phase has no systematic meaning, and that the "correct" polarity for the reproduction of a given recording is whatever the speakers are most comfortable with. Fine, I would say, but there's nothing here to suggest that we won't like what we hear better if we reverse speaker connections.

The attractive thing about experimenting with absolute phase is that, aside from a bit of labor, it's free—or it is up to a point. When you next visit a high-end audio salon, you will encounter a number of preamplifiers with switch provisions to invert phase prior to power amplification. The result should be the same as reversing speaker connections, but it's more convenient. And if you get interested in the effects of absolute phase, these devices are where it will cost you money. □



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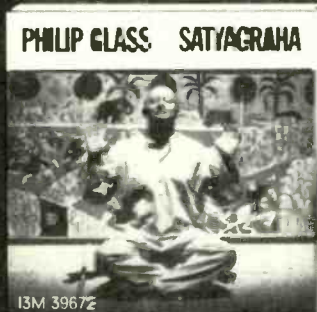
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Stereo Review's critics choose the outstanding current releases

TALKING HEADS' FASCINATING "LITTLE CREATURES"

THE new "Little Creatures" is the Talking Heads' Yuppie album. In it, lead singer and songwriter David Byrne discovers sex as a subject of possible importance and makes a related discovery: the existence of children. But I should add that the picture he paints of children and of life in the Eighties in general is one of confusion, disorientation, and trauma.

After trying funk, big-band soul, and "found" music, the Talking Heads have stripped down to a quartet again and have gone back to playing their original quirky, hyperactive variety of avant-garde garage-band rock. "Little Creatures" is their simplest, sparest record since "Talking Heads 77." As always, the music is more interesting for Byrne's vocal mannerisms and singular point of view than for what the group can do instrumentally.

The stalking, vampire guitar of *Give Me Back My Name*, the twangy steel of *Creatures of Love*, and the gospel intro to *Road to Nowhere* all give evidence of the band's eclecticism, but your ears are much more apt to perk up at the sound of Byrne's tropical bird calls on *Television Man* or the shrill, mischievous catch in his throat in, again, *Creatures of Love* as he sings, "Cute. Cute. Little baby. Little pee pee. Little toes." No other artist creates so convincingly the sense of someone who's just awakened to the world around him. Byrne sings about the most basic truths of our existence as though he'd suddenly landed here from another planet.

Byrne's fascination (or bewilderment) with children continues in *Stay Up Late*, in which the perspective is that of a curious, slightly ma-



Talking Heads: confusion, disorientation, and trauma in the Eighties

levolent sibling. And much of the rest of "Little Creatures" evinces the same sort of puzzlement, of indefinite feelings and inexplicable experiences, but is even less benign. *And She Was* is nonthreatening enough: a woman levitates up from her backyard and out over the earth. However, in the disquieting *Give Me Back My Name*, Byrne tells us that "something has changed" in his life, but whatever it is, there's no word for it or for what it feels like. In *Perfect World*, he contradicts himself three times in the first verse trying to explain the world he's seeking, and *Walk It Down* is an angry reaction to a culture that blurs ideas and ideology, life and life style. Fittingly, the album's closing track is *Road to Nowhere*; it reprises the contradictions of *Perfect World* and invites us to march blithely off into oblivion.

David Byrne reacts to the new baby boom and conformist culture of the Eighties with more alarm than most of his listeners, which is what makes the Talking Heads so consistently intriguing. While most of us accept the world around us as it is, or fail to notice how we change and compromise to accommodate its demands, Byrne is shocked and afraid, and he translates this fear

into a fascinating alternative view of things—a dissenting opinion, so to speak. The more this view conflicts with our own, the more we need to pay attention to it.

Mark Peel

TALKING HEADS: *Little Creatures*. David Byrne (vocals, guitar); Chris Frantz (drums); Jerry Harrison (keyboards, guitar, vocals); Tina Weymouth (bass, vocals); instrumental and vocal accompaniment. *And She Was; Give Me Back My Name; Creatures of Love; The Lady Don't Mind; Perfect World; Stay Up Late; Walk It Down; Television Man; Road to Nowhere.* SIRE 25305-1 \$8.98, © 25305-4 \$8.98, © 25305-2 no list price.

SUPERB BRITISH CONCERTOS FROM MA AND PREVIN

THE Elgar Cello Concerto with Yo-Yo Ma was for me the most memorable single performance in André Previn's festival of British music with the Pittsburgh Symphony Orchestra in November 1981, and Ma's subsequent performances of it with other

conductors have given further evidence of his affection for and mastery of the score. Now he and Previn have recorded it with the London Symphony Orchestra for CBS, and the album is superb. Theirs is the sort of committed music making in which nothing is taken for granted, even after dozens of collaborations. Along with the deep understanding and conviction these artists have developed through familiarity with the music, they convey in this performance an evident sense of continuing discovery. There may be a lapse or two in intonation, but they are hardly conspicuous in the grand sweep of the finale.

The very appropriate coupler is the Walton concerto, which has not had such eloquent advocates since its première at the hands of Gregor Piatigorsky (its dedicatee) and Charles Munch, whose recording of it is gone again after an all-too-brief recirculation. The same sense of discovery and chamber-music-like give and take that underlie the intensity of the Ma/Previn Elgar are felt in their Walton as well. They are a little more expansive than Piatigorsky and Munch in the two outer movements, and they tend to push on just a bit more in the middle one, but this only enhances the work's lyric quality.

Yo-Yo Ma: eloquent advocacy

The recording itself, made with the Decca digital system, is surpassingly fine, leaving no detail of Walton's brilliant orchestration hidden and reconfirming, as it were, the new level of sonic excellence achieved in several recent CBS releases. In every respect, this is one of the year's most treasurable issues, and when the Compact Disc comes along, the sound ought to be even more striking. *Richard Freed*

ELGAR: *Cello Concerto in E Minor, Op. 85.* **WALTON:** *Cello Concerto.* Yo-Yo Ma (cello); London Symphony Orchestra, André Previn cond. CBS ◉ IM 39541, © IMT 39541, no list price.

ROSANNE CASH'S "RHYTHM AND ROMANCE" IS A SOLID TRIUMPH

COUNTRY music is in a state of change right now," singer Rosanne Cash said last year. "It's separating into the neo-traditional, the neo-progressive, and a homogenized blend called neo-Velvetta."

Truer words have never been spoken in Nashville, where Rosanne, the daughter of country legend Johnny Cash, has herself been in a state of transition the last few years, both musically and personally. Lucky for us, the younger Cash was never so emotionally cluttered that she contemplated the Cheese Whiz end of the spectrum, but judging from her extraordinary, autobiographical new album "Rhythm and Romance," the changes have been major—and traumatic.

On all her previous albums, Cash experimented with integrating musical forms—country, pop, punk, and rock. So perhaps it is not so surprising that for her most personal and most impressive recording to date she has pushed herself one step further and come up with an album that should establish her as a full-fledged, well, "neo-pop" act, as Cash might put it. And while her main producer here is David Malloy, whose previous credits include



Cash: unflinching honesty

albums by Dolly Parton and Eddie Rabbitt, the backing is by such rock stalwarts as Tom Petty, keyboardist Benmont Tench (Petty's sometime co-writer), and John Cougar Mellencamp's guitarist Larry Crane. Part of the album was recorded in Nashville, other tracks were recorded in L.A., and still others were done in New York. But without exception, the playing, production, and engineering are hip, solid, and very, very good.

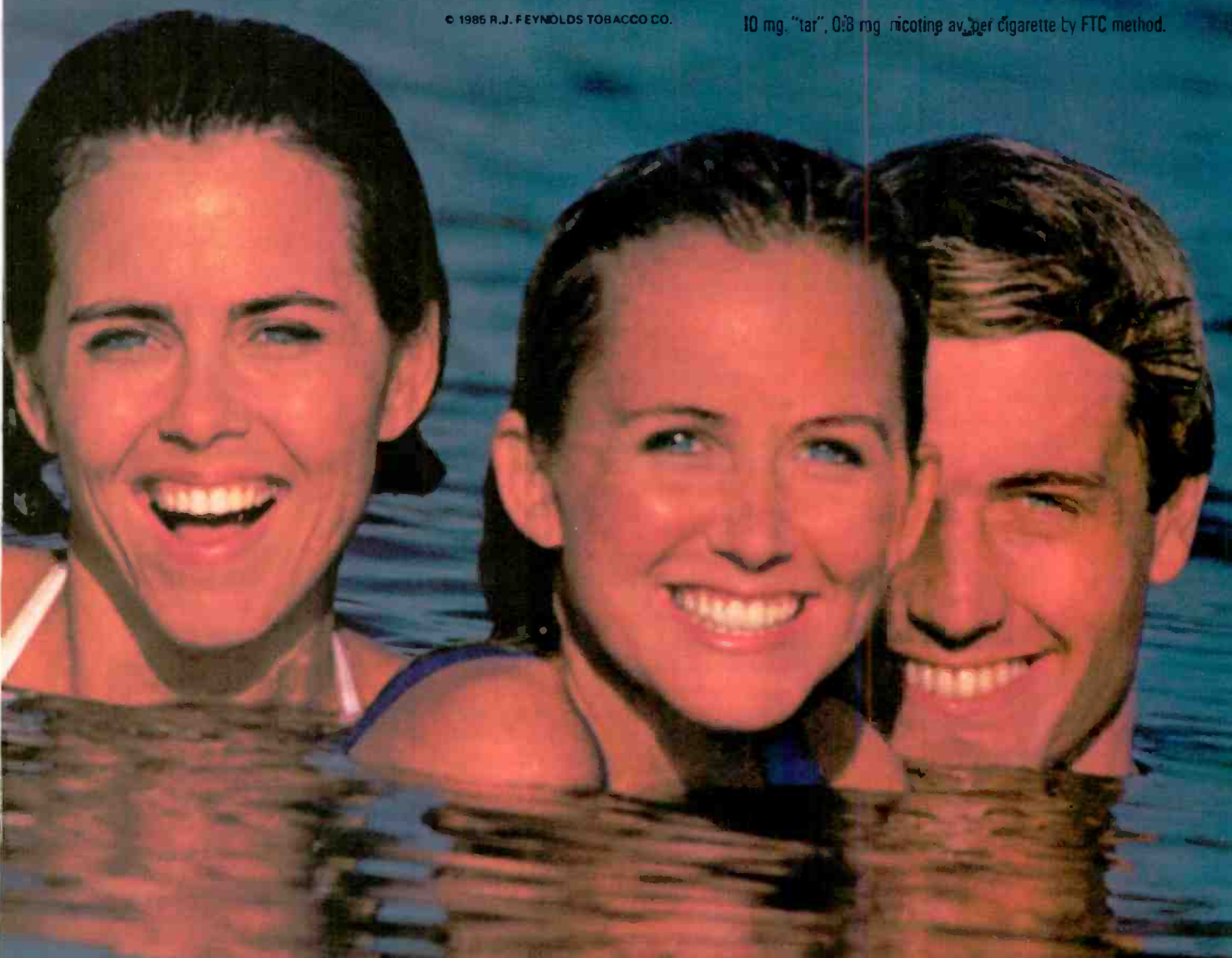
Eight out of the ten cuts are Cash originals that only strengthen her reputation as a bold, gutsy songwriter. The songs include a sad but tender and unflinchingly honest look at her famous father (*My Old Man*), a straightforward account of how pill dependency almost destroyed her marriage (*Halfway House*), and several views of her sometimes rocky, always stimulating relationship with her husband (*Closing Time*, *Never Gonna Hurt*, and *Second to No One*). As in the most famous of her songs, *Seven Year Ache*, Cash pulls no punches as a lyricist. And as a singer she sounds more confident and in control than ever.

Some of Cash's country fans are bound not to like this record, but anyone mindful of the growing ma-

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turity of one of the feistiest and forward-thinking of Nashville's singer/songwriters will see "Rhythm and Romance" as an artistic triumph—and one of the most engrossing, melodic pop records to come along in years. Neither neo-traditional, neo-progressive, nor you-know-what, it transcends the formal boundaries of however you think of Nashville music. In sum, catharsis—and change—have never sounded better. *Alanna Nash*

ROSANNE CASH: *Rhythm and Romance*. Rosanne Cash (vocals); Vince Gill, Jennifer Kimball (background vocals); vocal and instrumental accompaniment. *Hold On; I Don't Know Why You Don't Want Me; Never Be You; Second to No One; Halfway House; Pink Bedroom; Never Alone; My Old Man; Never Gonna Hurt; Closing Time*. COLUMBIA FC 39463, © FCT 39463, © CK 39463, no list price.

A POWERFUL, MELODIOUS NEW "BORIS GODOUNOV"



Vedernikov: bringing Boris to life

PAGES have been written on the various versions and different orchestrations to which Mussorgsky's *Boris Godounov* has been subjected. Suffice it to say here that the new Philips recording of this masterpiece uses the "definitive" edition incorporating the additions and changes the composer made following the initial rejection of the opera. It is a

performance of the opera as Mussorgsky left it, feeling it complete and whole.

The recording is uncommonly worthwhile because of the fine musical treatment of every scene. Some of the voices—that of Alexander Vedernikov in the title role, for example—are not as big as we usually hear in *Boris*, but other values emerge in the performance. The opera is sung throughout by every member of the large and accomplished cast; we hear melody where heretofore we have come to expect declamation or, worse, barking. A case in point is Boris's scene with Feodor, here sung with a smooth and flowing *cantabile*. The ensuing terror of the Clock Scene, no less effectively delivered, makes a strong contrast in its vivid drama and musical excitement. Again, the Garden Scene not only shows dramatically the ambitions of the self-interested Marina and Grigory but also builds musically to a gripping climax in the "love duet."

The recording has a fine balance between the orchestra and the voices, and there's a real sense of presence in the clarity and stereo imaging. The combination of fine individual performances and recording excellence brings the musical realization to the forefront. For this thanks are due in large measure to Vladimir Fedoseyev, whose conducting is clear, clean, and crisp. His was obviously a labor of love, and you feel that his artists share his enthusiasm for this most Russian of operas. There is a strong sense of *ensemble* in the performance: it is a total *Boris Godounov* in which the action of the Prologue and the four ensuing acts comes alive in a particularly powerful way. Highly recommended. *Robert Ackart*

MUSSORGSKY: *Boris Godounov*. Alexander Vedernikov (bass), Boris; Glafira Koroleva (soprano), Feodor; Elena Shkolnikova (soprano), Xenia; Nina Grigorieva (mezzo-soprano), Nurse; Andrei Sokolov (tenor), Shuisky; Vladimir Matorin (bass), Pimen; Vladislav Piavko (tenor), Grigory; Irina Arkhipova (mezzo-soprano), Marina; Artur Eisen (bass), Varlaam; others. USSR TV and Radio Large Orchestra and Chorus, Vladimir Fedoseyev cond. PHILIPS 412 281-1 four discs \$39.92, © 412 281-4 three cassettes \$39.92, © 412 281-2 three CD's no list price.

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- E.T.—THE EXTRA-TERRESTRIAL (John Williams). MCA MCAD-37264. The original soundtrack, digitally recorded, mixed, and mastered.
- THE JACKSONS: *Destiny*. EPIC EK 35552. "Performances drawn from their personal fountain of youth" (March 1979).
- TANIA MARIA: *Wild!* CONCORD PICANTE CCD-4264. "Live and wonderful" (August 1985).
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- BEETHOVEN: *Symphonies Nos. 2 and 4; Symphony No. 3 and Grosse Fuge; Symphonies Nos. 5 and 8*. Klemperer. ANGEL CDC-47185/6/7 (three separately packaged CD's). Vault classics.
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- FALLA: *El amor brujo; The Three-Cornered Hat*. And other works. Price, Reiner. RCA RCD1-5404 (long-playing "60+" CD). "Supreme" (May 1964).
- SCHUMANN: *Humoresque; Fantasiestücke*. Ax. RCA RCD1-4275. "Beautifully played" (October 1982).
- TCHAIKOVSKY: *Piano Concerto No. 1*. Rubinstein, Leinsdorf. RCA RCD1-5363. "Brilliance and unabashed lyricism" (February 1964).
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BACH: *Concerto in F Major (BWV 978); Preludes and Fugues in B Minor (BWV 923/951), G Major (BWV 902.1), and F Major (BWV 901); Fantasias in G Minor (BWV 917) and C Minor (BWV 918-919); Suite in A Minor (BWV 818a).* Timothy Roberts (harpsichord). HYPERION ● A66154 \$11.98.

Performance: *Warm*
Recording: *Very good*

Titled "A Bach Notebook," this unusual album of some of Bach's lesser-known harpsichord pieces is a most welcome addition to the catalog during the master's tricentennial year. The two works based on Bach's study of Vivaldi and Albinoni, the F Major Concerto and the Prelude and Fugue in B Minor, and the two other preludes and fugues, precursors to the versions in *The Well-Tempered Clavier*, are not only of historical interest but fine pieces in their own right. The three brief fantasias are exuberant, and the stunning Suite in A Minor rivals any of the better-known French Suites.

Playing a modern copy of a German instrument from Bach's time, Timothy Roberts displays a beautifully molded legato style and turns in radiantly warm performances. A perfectly delightful album. *S.L.*

BACH: *French Suites, Nos. 1-6 (BWV 812-817).* Andrei Gavrilov (piano). ANGEL ● DSB-3971 two discs \$23.98, © 4D2X-3971 two cassettes \$23.98.

Performance: *Very satisfying*
Recording: *Superb*

The few recordings by Andrei Gavrilov to reach us in the U.S. so far have all been of Russian music—Tchaikovsky, Rachmaninoff, Prokofiev, Scriabin—except for a little Ravel. His unexpected survey of Bach's French Suites reminds us that his great compatriot Sviatoslav Richter also distinguished himself in Bach (particularly *The Well-Tempered Clavier*) and that Gavrilov is said to be one of Richter's favorites.

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NEW VIOLIN CONCERTOS



Violinist Perlman, conductor Ozawa: commitment

ITZHAK PERLMAN'S commitment to the music of his own time is made evident by his fine new recording, for Angel, of violin concertos by two contemporary American composers—Earl Kim and Robert Starer. Both works were written for Perlman and introduced by him, the Kim in 1979 and the Starer in 1981.

While neither concerto is exactly a crowd pleaser, Starer's is the more immediately accessible in that it is more conventional in both form and content, with some long-drawn melodic lines and piquant coloring. Starer himself calls attention to the work's "slight Near-Eastern flavor," which comes to the fore quite effectively in the slow movement, while the last (and longest) movement is a more conventional display piece.

The Kim concerto seems at first to be one of those post-Webern formula affairs in which the melodic material is all terribly quiet and the more vigorous material is made up of abortive fragments. A second or third hearing, though, reveals the originality of the piece in terms of both its structural

sense and its sometimes hypnotic content. It is a work of sonorities rather than melodies, and there are some haunting ones—in particular those evoking a somewhat different kind of "Eastern" flavor from that of the Starer work ("a strange remembering of the music of Bali," according to Kim).

Leonard Slatkin recently remarked on the preponderance of slow music among compositions of the last quarter-century. While the Kim concerto may be a case in point, it is in its elongated slow sections that Perlman has the most beautiful material, and no one is likely to carp about that. His performances of both works with the Boston Symphony under Seiji Ozawa's direction must surely be regarded as definitive. The recording itself, made with the assistance of the National Endowment for the Arts and the American Express Foundation, is first-rate. *Richard Freed*

KIM: *Violin Concerto.* **STARER:** *Violin Concerto.* Itzhak Perlman (violin); Boston Symphony Orchestra, Seiji Ozawa cond. ANGEL ● DS-38011 \$11.98, © 4DS-38011 \$11.98.

Gavrilov's performances of the French Suites are for the most part enormously satisfying: straightforward, uncluttered, unselfconsciously responsive to both the depth and the vitality of the music, and ever mindful of the different characteristics of the various dance movements that make up each suite. Curiously, however, he adopts a rather blustery style for the concluding

gigue in each of the suites, which seems a little out of joint with the more elegant manner in which he plays the preceding movements.

Gavrilov is sensitive to the need to vary the repeats, but subtly, and every repeat is taken. As a result, two of the sides are really filled out, and Suites Nos. 5 and 6 take up a side each. (Was it Gavrilov's idea, or the tape editor's, I

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wonder, to run the courantes and sarabandes in those suites together without pause?) With thirty-six-minute sides rather common today, especially using DMM processing, as in this case, the two final suites probably could have shared a single side, but the sound is superb, and no one is likely to feel that this set gives less than full value. In nearly every respect it is a splendid album, and listeners who find Glenn Gould's recording of the French Suites on CBS too highly charged should be especially happy with Gavrilov's as an alternative. *R.F.*

BERLIOZ: *Symphonie fantastique, Op. 14.* Philadelphia Orchestra, Riccardo Muti cond. ANGEL ● DS-38210 \$11.98, ©4DS-38210 \$11.98, ©CDC 7 47278 2 no list price.

Performance: *Refined*
Recording: *Very good*

BERLIOZ: *Symphonie fantastique, Op. 14.* London Symphony Orchestra, Carlos Païta cond. LODIA ● LO 777 \$14.98, ©LO-CD 777 no list price (from International Book & Record Distributors, 40-11 24th St., Long Island City, NY 11101).

Performance: *Hectic*
Recording: *Loud and brilliant*

And still they come! Still more recordings of Berlioz's extraordinarily vivid and interpretively challenging *Symphonie fantastique!* There are more than thirty LP versions to choose from in the current Schwann, and now, with these two releases, there are nine on CD.

What is most immediately striking in Riccardo Muti's treatment of the score is the control and refinement of phrasing shown throughout the first movement and in the central *Scène aux champs*, where the string playing is impressively lovely in tone and warmth. More lit in the Ball episode and more urgency in the *Marche au supplice* would have been welcome, but the Witches' Sabbath gets its proper due and benefits, like the performance as a whole, from a well-controlled acoustic ambience. The sound on the CD is stunning, most effectively in the vast silences and spaces of the *Scène aux champs*.

My reactions to the recordings of the Argentine conductor Carlos Païta have been mixed, but his reading of the *Symphonie fantastique* suffers badly in comparison with Muti's. It strikes me as a vulgarization of Charles Munch's hell-for-leather approach. The *Scène aux champs* lacks poetic repose and the *March to the Scaffold* becomes a quick-step. The recording level is almost disconcertingly loud, and the microphone pickup is too close up. Not recommended, even on CD. *D.H.*

ELGAR: *Cello Concerto* (see *Best of the Month*, page 71)

FAURÉ: *Requiem; Cantique de Jean Racine.* Carol Ashton (soprano); Ste-

phen Varcoe (baritone); Cambridge Singers; Members of the City of London Sinfonia, John Rutter cond. COLLEGIUM ● COL 101 LP \$10.98, ©COL 101 CS \$9.98, ©COL 101 CD \$17.98 (from Stan Schmidt, U.S. Distributor, P.O. Box 31366, Omaha, NB 68131).

Performance: *Ethereal*
Recording: *Fine*

The conventional use of a full symphonic orchestra for music with the delicacy and subtle nuance of the Fauré Requiem has always mystified me, and it turns out that Fauré himself probably had little to do with the orchestral version that was first performed and subsequently published in 1900. His original version, performed for the first time at the Madeleine in Paris in 1888, called only for solo violin, harp, timpani, organ, and a handful of violas, cellos, and basses. In 1893 he prepared a second version that added two more movements, trumpet and horn parts, and violins in the *In Paradisum*. John Rutter has gone back to this second version for this recording, and the result is a revelation.

Besides the reduced scoring, the performance removes the work from the concert hall, where it has no business, and returns it to the church as part of the liturgy. The muted sound of the small instrumental ensemble over the continuous flow of the organ accompaniment is in keeping with the spirit of this most French of Requiems. No other recording of liturgical music exudes the wrapped, voluptuous mysticism of French Roman Catholicism the way this one does.

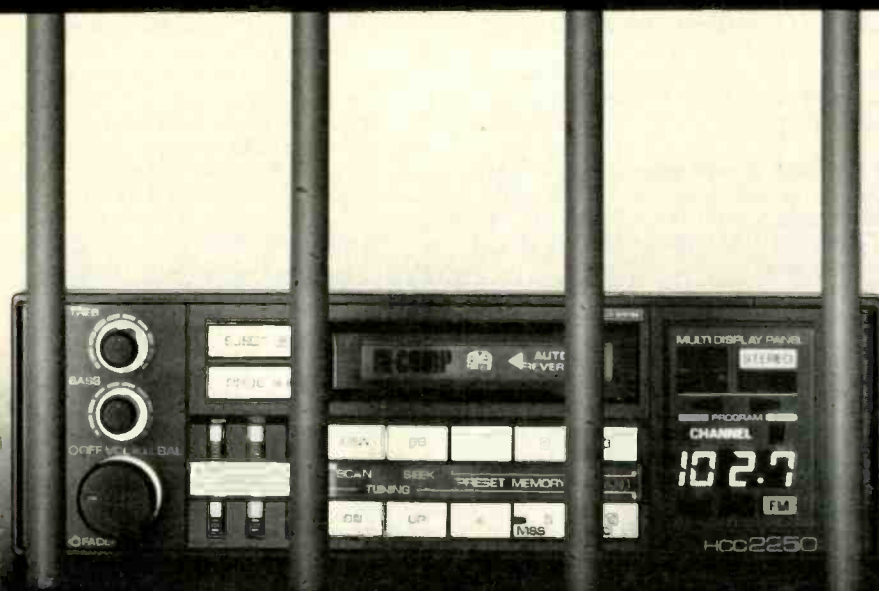
But this evocation of a liturgical ambience is not simply the result of Rutter's return to the earlier score or his poised direction. Soprano Caroline Ashton floats angelic sounds over the limpid sonorities of a crystal-clear chorus, and baritone Stephen Varcoe sings with a subdued emotion that supports his voice but never quite reaches the surface. The same approach is used in the brief, youthful *Cantique de Jean Racine*, a bonus that makes the album even more attractive. *S.L.*

MACHAUT: *La Messe de Notre Dame; Chansons.* Nancy Armstrong (soprano); Mark Kagen (tenor); Boston Camerata, Joel Cohen cond. HARMONIA MUNDI HMC 5122 \$11.98, ©HMC 405122 \$11.98.

Performance: *Very good*
Recording: *Very good*

Here is a straightforward and sensible performance of Machaut's monolithic fourteenth-century *Notre Dame* Mass. There is no self-consciousness about the work's archaic qualities—just good clean singing and playing. On side two Nancy Armstrong and Mark Kagen, accompanied by hurdy-gurdy, recorder, and lute, turn in delightful performances of some of Machaut's more accessible chansons. What a contrast there is between his monophonic writing in

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these and the complex polyphony of the Mass. This album reveals many sides of a fascinating composer, and it does Joel Cohen and his Boston Camerata proud. S.L.

MOZART: *Mass in C Major (K. 317, "Coronation"); Missa Brevis in C Major (K. 220); Inter natos mulierum (K. 72)*. Peret Jelosits (tenor); Gerhard Eder (bass); Vienna Boys' Choir; Chorus Viennensis; Vienna Symphony Orchestra, Uwe Christian Harrer cond. PHILIPS ● 411 139-1 \$10.98, © 411 139-4 \$10.98, © 411 139-2 no list price.

Performance: *Heavy*
Recording: *Thick*

The Vienna Boys' Choir is wonderfully fresh here, with that raw but clarion sound that only Viennese boy singers can make. The two uncredited boy soloists are extraordinary. But Uwe Christian Harrer and the orchestra are another story. They play the music as though it were Beethoven's; their exaggerated use of accents and dynamic contrasts obliterate the transparency of Mozart's music. With the exception of the *Coronation* Mass, Mozart comes very close to comic opera in a good deal of this choral writing, and no amount of trying to force these pieces into a ponderous, churchy, nineteenth-century style will work. S.L.

MUSSORGSKY: *Boris Godounov* (see Best of the Month, page 74)

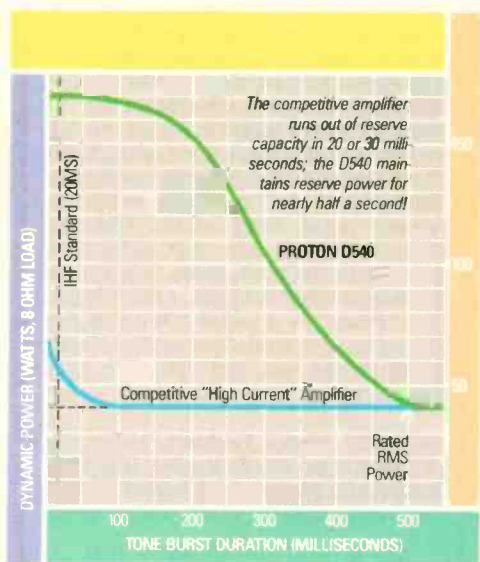
RACHMANINOFF: *Symphony No. 1, in D Minor, Op. 13; The Rock, Op. 7*. Berlin Philharmonic Orchestra, Lorin Maazel cond. DEUTSCHE GRAMMOPHON ● 413 784-1 \$10.98, © 413 784-4 \$10.98.

Performance: *Very good*
Recording: *Good to excellent*

With this disc Lorin Maazel completes his digitally recorded cycle of Rachmaninoff's major orchestral works, this one with the Berlin Philharmonic. I find Maazel's reading of the initially ill-fated First Symphony exceptionally interesting (as I did his other Rachmaninoff performances), if only because it avoids the hysteria of some other readings without slighting the work's drama. In the scherzo, Maazel's sharply pointed accents and dynamics provide an atmosphere of chilling menace, though a remarkable delicacy of texture distinguishes his reading of the quieter parts of the slow movement. The introductory pages of the finale, with its major-key transformation of the first movement's main theme, has an almost Brucknerian solemnity here, and Maazel's stern control in the coda is very effective indeed.

The Rock, purely as music, aside from its programmatic associations with Chekhov and Lermontov, strikes me as quite atypical of Rachmaninoff's style. I feel something of the breath of French impressionism before the fact (Debus-

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BARENBOIM'S BEETHOVEN



THROUGHOUT his career Daniel Barenboim has made a specialty of Beethoven's thirty-two piano sonatas. He began playing them while still in his teens, he recorded a complete cycle of them for EMI in the late 1960's, he has recently taped a complete performance of the sonatas for European television, he will be playing all thirty-two of them in European and American concert halls this season and next, and he has rerecorded all of them digitally for Deutsche Grammophon.

The youngest pianist to record a complete cycle of these sonatas, Barenboim was not yet thirty when he finished the set released here by Angel in 1970. Some critics seemed almost offended by the audacity of so young an artist in offering the world his view of these monuments of the piano literature, but many were surprised by the maturity of his interpretations. The Angel recordings have held up very well, and I have found it rewarding to return to them again and again over the last fifteen years.

Now verging on middle age, Barenboim in the new Deutsche Grammophon set has advanced to a higher level of artistry and interpretation. As before, his approach to some of the sonatas is unconventional. You may quibble with some tempos, for example, but he is usually convincing and never less than interesting.

Comparing his DG performances with the Angel set, I find that the overall impression Barenboim gives is still one of virile romanticism. There is no loss of muscularity in his playing, but I sense gains in authority, poetry, and lyricism. To me certain of his performances here are extraordinarily moving.

Those critics at the leading edge of digital recording have often berated

Deutsche Grammophon for being slow to learn how to use this new technology to full advantage. This time I think DG has got it right. The piano seems not too close—yet still in the room with you—and the sound is almost startling in its realism. Well pressed and with silent surfaces, the LP's remind me of the DG of old. With their total absence of tape hiss and surface noise, the Compact Discs, of course, are a joy, and they best capture the wide dynamic range that is an integral part of Barenboim's performances.

I have great respect for Alfred Brendel's work with Beethoven sonatas, and his complete cycle is available on Compact Discs (and LP's) from Philips. In general, his approach is cooler and more straightforward than Barenboim's. You will not go wrong with either set. Those who find Brendel too literal, however, should opt for Barenboim, who will, I think, give them more excitement.

Beethoven's piano sonatas, written over a span of nearly thirty years, are among the richest achievements of Western music. In fifteen years I have not exhausted Barenboim's Angel cycle (only parts of which are still in the catalog). I expect to be listening to the new Deutsche Grammophon set for the rest of my life. I think it contains a lifetime of pleasure, intellectual stimulation, and spiritual nourishment.

William Livingstone

BEETHOVEN: Piano Sonatas Nos. 1-32. Daniel Barenboim (piano). DEUTSCHE GRAMMOPHON Nos. 1-15—
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sy's *Faune* was not heard until 1894, a year after Rachmaninoff completed his piece). It is to this aspect of the work and to its delicate orchestral textures that Maazel responds in this performance. The result is most convincing.

The recorded sound, in terms of stereo imaging, has great depth. I only wish that there were a shade more lateral spread and generally more forward sound. I found it necessary to play this disc at a higher than normal level to achieve the full effect of the music, particularly in the symphony. *D.H.*

RESPIGHI: *The Fountains of Rome; The Pines of Rome; The Birds.* Atlanta Symphony Orchestra, Louis Lane cond. TELARC ● DG-10085 \$12.98, © CD-80085 no list price.

Performance: *Neat*
 Recording: *Clean*

Despite the conscientious direction of Louis Lane and solid orchestral ensemble on the part of the Atlanta Symphony, heard to best advantage in *The Birds*, these performances of Respighi's popular tone poems don't quite measure up to the best rival versions. And, although the warm acoustic of the Atlanta recording locale makes for a very rich bass, it also takes some of the sheen from the composer's bright orchestral sonorities at the upper end of the frequency range. Even at the low end, there is nothing here that quite compares with the remarkable organ pedal audible in Charles Dutoit's recording of *The Pines* on London. With regret, then, I have to conclude that this Telarc effort is not bad, but not quite good enough either. *D.H.*

SCHOENBERG: *Verklärte Nacht, Op. 4; Suite, Op. 29.* Ensemble InterContemporain, Pierre Boulez cond. CBS ● IM 39566, © IMT 39566, no list price.

Performance: *A hit and a miss*
 Recording: *Very good*

Pierre Boulez is actually listed here as conducting only the Op. 29 Suite. He is credited for "musical supervision" of the performance of the original sextet version of *Verklärte Nacht* (*Transfigured Night*), which is tidy but no more convincing than either of his two earlier recordings of the work (both now deleted). The recorded sound is very good but of little help to a performance that sounds bored. The Op. 29 Suite receives a brilliant and altogether more stimulating performance, however, and it is convenient to have it uncut on a single side. *R.F.*

SCHUBERT: *Symphony No. 9, in C Major (D. 944, "The Great").* Berlin State Orchestra, Otmar Suitner cond. DENON © 33C37-7371 no list price.

Performance: *Spirited*
 Recording: *Fine*

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Heinz Rogner and the East Berlin Radio Orchestra in 1978. This new Denon recording was made in the same East Berlin church by the same team of German and Japanese engineers in September of last year. No one familiar with Otmar Suitner's other recordings will be surprised by the excellence of this one.

To say that Suitner's Schubert is "spirited" is to say both that it is vigorous, in the best sense, and that it is filled with an identifiably Schubertian spirit. Some listeners may find his opening movement too breezy by half, but the speed is far more welcome than the

ponderous, ceremonial approach adopted by so many other conductors, and it actually works well with his pacing of the slow movement, in which the *con moto* appended to the *Andante* marking is very pointedly honored. Suitner takes all the repeats in both the scherzo and the finale, with the result that all four movements become roughly equal in length. This approach may make more sense than taking the repeats in the scherzo alone, as James Levine did in his recent Deutsche Grammophon recording.

The one digital recording of this work

made so far in West Berlin—by Klaus Tennstedt on Angel—has not yet appeared on CD. Until it does, I'd be happier with either of the two on Denon than with any other version available in this format, and perhaps happiest of all with Suitner's, which has a lovely bloom on the winds and strings and a stunning wide-open sound. *R.F.*

TCHAIKOVSKY: *Symphony No. 2, in C Minor, Op. 17* ("Little Russian"); *Fantasia, The Tempest, Op. 18*. Chicago Symphony Orchestra, Claudio Abbado cond. CBS ◉ IM 39359, ◉ IMT 39359, no list price.

Performance: *Strongly lyric*
Recording: *Rich, bass-heavy*

The *Little Russian* Symphony of Tchaikovsky has fared well on records over the years. Indeed, this new version by the Chicago Symphony is Claudio Abbado's second recording of the score. *The Tempest*, however, remains the orphan child among Tchaikovsky's Shakespearean works; for reasons I can't quite fathom, it has had relatively few recorded performances.

Abbado opts for a decidedly lyrical emphasis in his reading of the symphony, though he also tries to preserve the rhythmic snap of the end movements. His compromise approach comes close to success, notably in the charming second-movement march and the sparkling, balletic scherzo. However, both the main body of the first movement and the brilliant *kamarinskaya*-style finale are vitiated to a significant extent by a sonic balance that favors the bass frequencies. The overall sound is rich to a fault, but the midrange suffers.

In *The Tempest* the recording's extended bass does wonders for the atmospheric sea music that opens and closes the work, and the Chicago Symphony brasses sound forth magnificently in the Prospero theme. *D.H.*

VERDI: *Quartet in E Minor*. TCHAIKOVSKY: *Quartet No. 1, in D Major, Op. 11*. Guarneri Quartet. RCA ARL1-5419 \$9.98, ◉ ARK1-5419 \$9.98.

Performance: *Bland*
Recording: *Crisp*

This is not the first time these works have been paired on a record, but the big-name quartets have seldom done very well by the Verdi, probably because they simply don't play it often. I wonder if it really is in the Guarneri's repertoire, and, for that matter, how often this group has played the Tchaikovsky. The performances here are fairly alert, and they benefit from the crisp, well-delineated sonics, but in general they are rather bland, suggesting capable sight-reading more than any degree of real involvement or commitment. The Verdi quartet is an appealing work that still awaits a thoroughly satisfying recording. *R.F.*

WALTON: *Cello Concerto* (see Best of the Month, page 71)

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FRENCH BALLET MUSIC OF THE 1920's. *L'Éventail de Jeanne*. (Ravel, Ferroud, Ibert, Roland-Manuel, Delannoy, Roussel, Milhaud, Poulenc, Auric, Schmitt). *Les Mariés de la Tour Eiffel* (Auric, Milhaud, Poulenc, Tailleferre, Honegger). Philharmonia Orchestra, Geoffrey Simon cond. CHANDOS Ⓢ ABRD 1119 \$13.98, © CHAN CD-8356 \$17.

Performance: *Appealing*
Recording: *Excellent*

Perhaps the most remarkable thing about this Chandos record pairing *L'Éventail de Jeanne* with *Les Mariés de la Tour Eiffel* is that no one has done it before. These lightweight French ballets, whose composite scores involve no fewer than a dozen composers, are so proportioned that they fit conveniently on the two sides of an LP, and yet neither of them had been available in full until Chandos's resident seeker-out of intriguing oddities, Geoffrey Simon, recorded them with the Philharmonia Orchestra.

L'Éventail de Jeanne (Jeanne's Fan) was assembled in 1927 by Jeanne Dubost, who invited each of ten composers to contribute, figuratively on a leaf of her fan (hence the title), a little piece for a ballet to be danced by gifted children.

The opening *Fanfare* by Ravel has been recorded a number of times; here, for the first time in a recording, the pieces by Pierre-Octave Ferroud, Jacques Ibert, Alexis Roland-Manuel, Marcel Delannoy, Albert Roussel, Darius Milhaud, Francis Poulenc, Georges Auric, and Florent Schmitt follow it in sequence. The two waltzes, by Ibert and Schmitt, are especially appealing.

Les Mariés de la Tour Eiffel (The Married Couple of the Eiffel Tower) was created a half-dozen years earlier for one of those incredible farces concocted by Jean Cocteau. In this case there are also ten numbers, but only five composers—the group known as *Les Six* minus one of its members, Louis Durey. Two of the three pieces by Milhaud and both of those by Poulenc have been recorded before, but, again, never as part of the entire sequence. *Les Mariés* is shorter than *L'Éventail de Jeanne* but a little more substantial, definitely an adult entertainment. Here the most impressive pieces may be the *Waltz of the Telegrams* and the *Quadrille*, both by Germaine Tailleferre, and the *Marche funèbre* by Arthur Honegger.

Not "important" music, perhaps, or even, some might say, as interesting to hear as to read about, but it is all stylishly entertaining, filled with that peculiarly Gallic wit and warmth of heart. Such works certainly ought to be available in

recorded form, and this handsome release should take care of them for some time. Enthusiasm, commitment, and a high level of professionalism are evident in every respect, not least in the stunning sound. R.F.

EVA MARTON: Scenes from Wagner. *Die Götterdämmerung: Immolation Scene. Tannhäuser: Dich, teure Halle. Lohengrin: Einsam in trüben Tagen. Tristan und Isolde: Liebestod.* Eva Marton (soprano); Philharmonia Orchestra, Árpád Joó cond. SEFEL 5024 \$12.98.

Performance: *Arresting*
Recording: *Very good*

There's no denying the excitement Eva Marton creates, whether on stage or on records (at least on this record). The soprano is not afraid to inflect a line for dramatic effect, a technique that's always telling on stage but sometimes jarring in a recorded performance. The Immolation Scene, exciting theatrically, is here so intense that one has little feeling of Brünnhilde's acceptance of or reconciliation to her fate. Similarly, "Dich, teure Halle," though stirringly sung, lacks Elisabeth's radiant joy.

Altogether, this is a highly dramatic and at times thrilling album, but I do not find it subtle enough musically. The orchestra under Árpád Joó plays vigorously and with passion. R.A.

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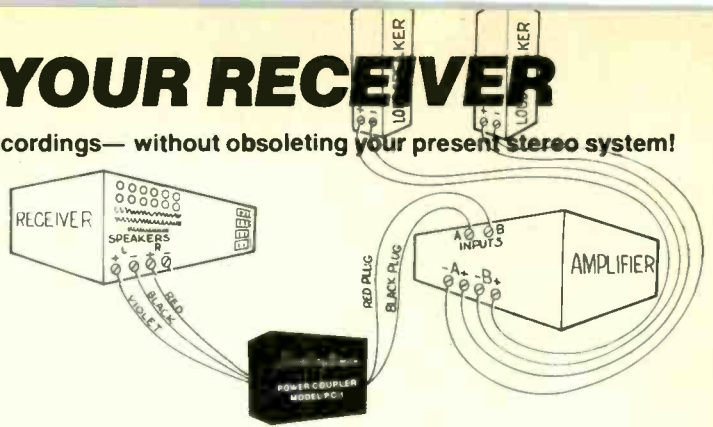
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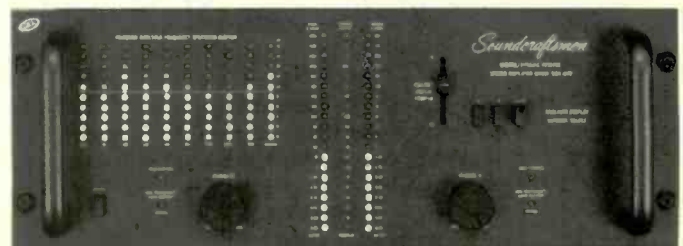
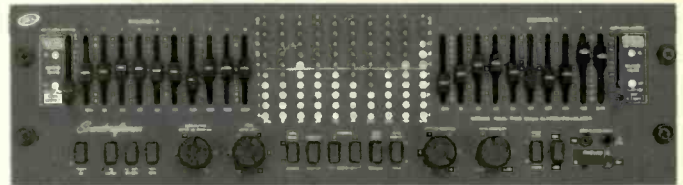
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PETER ALLEN: *Captured Live at Carnegie Hall.* Peter Allen (vocals, piano); orchestra. *Not the Boy Next Door; Fly Away; I Go to Rio; Harbour; Everything Old Is New Again; I Could Have Been a Sailor; Knockers;* and fifteen others. ARISTA AL-12-8275 two discs \$11.98, © AC-12-8275 one cassette \$11.98.

Performance: *Much too much*
 Recording: *Okay*

In small doses, a song or two, Peter Allen can be entertaining (*I Go to Rio*) and sometimes even moving (*Quiet Please, There's a Lady Onstage*). As a songwriter his talent is unquestionable. But in live performance, as he is for the almost two hours of this set, he's really just a big, campy bore. He works so hard at being cute, adorable, and friendly that he makes Punky Brewster look like Judith Anderson. And without the dials and boosters of studio recording, Allen's voice is a wan and errant thing that no amount of his piano pounding can mask. If Allen keeps going at this rate, Liberace is in for some real competition. Needless to say, the audience was in a state of hysterical ecstasy from his entrance until (what seemed like days later) his final exit. *P.R.*

THE BEACH BOYS. The Beach Boys (vocals and instrumentals); other musicians. *Getcha Back; It's Gettin' Late; Crack at Your Love; Maybe I Don't Know; She Believes in Love Again;* and five others. CARIBOU BFZ 39946, © BZT 39946, no list price.

Performance: *Slick*
 Recording: *Likewise*

This is not an embarrassment, as most recent Beach Boys records have been, but neither does it definitively answer the Big Question: has Brian Wilson regained his marbles? It is a very slick piece of contemporary record-making and, on its own commercial terms, quite listenable.

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R.E.M.'S FABLES



R.E.M.: from left, Mike Mills, Michael Stipe, Peter Buck, Bill Berry

OVER the course of three albums I haven't been able to understand more than a few words from the mouth of Michael Stipe, R.E.M.'s lead singer. But I don't particularly care, since he's probably got the most haunting voice ever heard in rock-and-roll, and the noises his band makes behind him are among the most imaginative and evocative any band has made in years. Call their stuff mystery-rock, call it Southern Gothic, call it a taxi. Call it what you will. Whatever it is, I love it—and so should all right-thinking Americans.

R.E.M.'s latest album, "Fables of the Reconstruction/Reconstruction of the Fables," was produced by English folk-rock master Joe Boyd. It's not as quirky and unpredictable as their previous albums, produced by fellow-Georgian Mitch Easter, but it *does* have the kind of expensive sonic sheen that might just connect them with that elusive Mass Audience. The music, fortunately, is of a piece with their previous work. Sometimes it can be a bit abrasive—*Feeling*

Gravity's Pull is jagged and metallic enough to recall Tom Verlaine and Television—and there is a quote from Blue Öyster Cult's *Don't Feel the Reaper*, apparently a long-unacknowledged influence. But most of the album continues (expands on?) the basic R.E.M. approach—the twelve-string sound of the Byrds filtered through a post-hippie sensibility and colored with just a hint of backwoods Anglo-Saxon folk. It's simultaneously right up to date and as old as the hills. A thoroughly lovely album. *Steve Simels*

R.E.M.: *Fables of the Reconstruction/Reconstruction of the Fables.* R.E.M. (vocals and instrumentals); other musicians. *Feeling Gravity's Pull; When I Was Young; Life and How to Live It; Good Advice; Green Grow the Rushes; Wendell Gee; Can't Get There from Here; Another Engine; Maps and Legends; Kahdelek; Driver 8; Old Man Kenney; Auctioneer.* I.R.S. IRS-5592 \$8.98, © IRSC-5592 \$8.98, © IRSD-5592 no list price.

Steve Levine and with songs courtesy of Boy George and Stevie Wonder, the album puts trademark Beach Boys vocal arrangements on top of up-to-the-minute backing tracks, and by and large it works. The sonic glitz serves to remind us that Brian Wilson was making exactly the same kind of noises twenty years ago, only the hard way, without benefit of synthesizers or Linn drums.

The material is variable. Some of the outside stuff is pretty good (Carl Wilson sings the pants off Boy George's *Passing Friend*), some of the originals are revivalist (*Getcha Back* is a fairly blatant attempt at an old-style Beach Boys number), and Brian's new songs, especially *I'm So Lonely*, continue in his recent vein of lyrical naïveté and painful sincerity. All in all, it's a pleasant little album, somewhere to the left of

Its double CD player lets you play the hits and skip the misses.



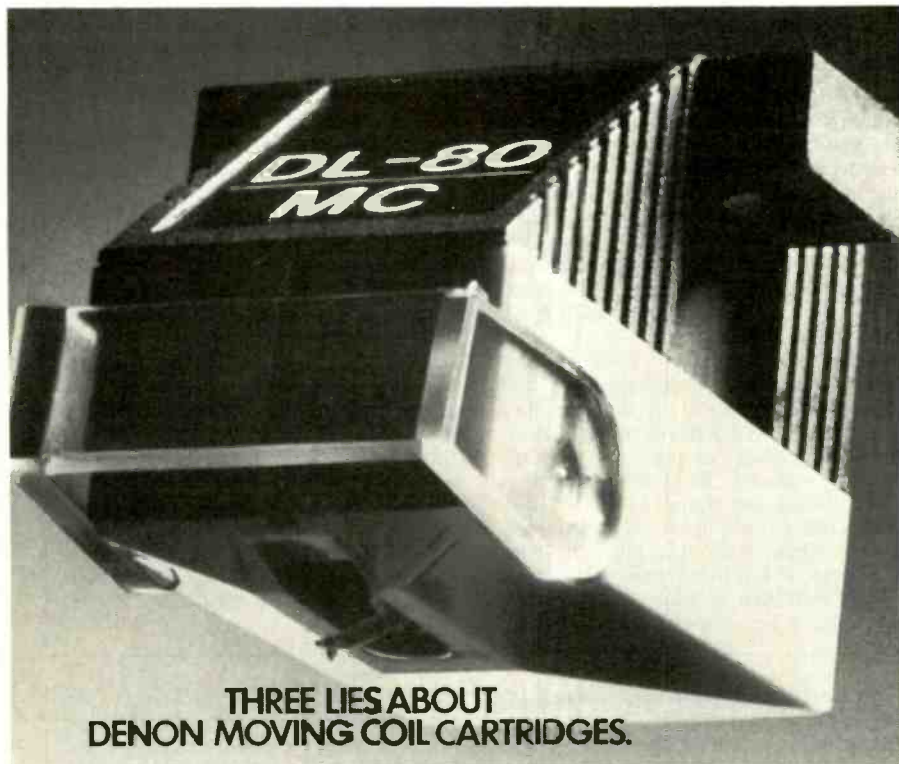
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Kenny Loggins. It's still a pleasure to hear that inimitable vocal blend, even applied to songs that will scarcely stand the test of time. S.S.

DAVID BYRNE: Music for "The Knee Plays." David Byrne (voice); instrumental accompaniment. *Tree (Today Is an Important Occasion)*; *In the Upper Room*; *The Sound of Business*; *Social Studies*; *Theadora Is Dozing*; and seven others. ECM © 25022-1 \$9.98, © 25022-4 \$9.98.

Performance: *Okay*

Recording: *Ditto*

The avant-garde exists to keep the establishment from taking anything for granted. Avant-garde work is difficult by definition and mission. David Byrne's "Music for *The Knee Plays*" is actually tame by avant-garde standards, although few will find it easy to savor. Listeners hoping for more of the highly charged, percussion-based music Byrne wrote for Twyla Tharp's *The Catherine Wheel* will be disappointed.

Written as incidental music for Robert Wilson's opera *The Civil WarS* (I don't understand the point of Wilson's capital S any more than I understand why an opera should need incidental music), *Knee Plays* is patterned after New Orleans jazz—funeral marches, chiefly—and scored principally for horns. To say that is deliberate in its pacing would be to understate the facts considerably. Byrne is to be congratulated for capturing the life-sapping essence of an August afternoon in the bayou, and for managing to make every horn—trumpet, trombone, or saxophone—sound like a tuba on Valium.

Not that the record is altogether without fun. *The Sound of Business*, which suggests sort of a slow-motion soundtrack for a TV cop show, is going on my next party tape, and Byrne's voice-over narrations are usually entertaining. But by and large, *Knee Plays* is strictly for the nose-thumbing, dyed-in-the-wool artistic renegade. M.P.

ROSANNE CASH: Rhythm and Romance (see Best of the Month, page 71)

GAL COSTA: Gal Profana. Gal Costa (vocals); other musicians. *Vaca profana*; *Nada mais (Lately)*; *Atrás de luminosidade*; *De volta ao começo*; *Onde está o dinheiro*; *Topazio*; and six others. RCA 103.0637 \$8.98.

Performance: *Stylish Brazilian pop*
Recording: *Very good*

Gal Costa is little known in this country, but in Brazil she is now the leading female singing star. In the late Sixties, she figured prominently in the Tropicalia movement, which fused characteristics of rock with traditional Brazilian music. An eclectic approach is certainly the key to the appeal of her ingratiating new album, "Gal Profana." Costa tackles a wide variety of songs, delivering them with aplomb in a voice that is suf-

ficiently robust to sail over a heavy beat yet sweet enough to embrace the ear. Obviously she is an artist of extraordinary versatility.

Onde está o dinheiro is as flashy as a show tune, and Costa invests it with pizzazz, whereas her treatment of Stevie Wonder's *Nada mais (Lately)* is heart-breakingly tender. Many of these selections show an obvious rock influence, though more in the instrumental backing and structure than in the singing, which is smooth and never gritty. The best is *O revolver do meu sonho*, which pays tribute to the Beatles. Several others fall close to the core of Brazilian popular music, but don't expect the sophisticated approach of a Milton Nascimento.

Overall, it is Gal Costa's polished delivery that makes the album worthy of serious attention, but be warned that she sings only in Portuguese and no translations are provided on the cover or inner sleeve. Fortunately, music is the universal language, and it is unnecessary to understand the words to get at least part of Gal Costa's message. P.G.

DEJOHNETTE: *The Jack DeJohnette Piano Album.* Jack DeJohnette (piano, synthesizer); Eddie Gomez (bass); Freddie Waits (drums). *Minority; Lydia; Countdown; Ahmad the Terrible;* and four others. LANDMARK LLP-1504 \$9.98, © LC-1504 \$9.98.

Performance: *Superb*
Recording: *Excellent*

Although Jack DeJohnette started out playing piano at the age of four, he has been so prominent a percussionist during the past decade and a half that his keyboard abilities have been overshadowed. This new album brings his profile as a pianist into sharp focus, and what a surprise it turns out to be.

From the exciting opener, Gigi Gryce's classic *Minority*, it is apparent that DeJohnette plays with utter authority. Not a pedestrian moment follows as he ranges from modern-jazz gems, like John Coltrane's *Spiral* and *Countdown*, to Cyndi Lauper's punky *Time After Time*, which was first adopted by Miles Davis. He is also a subtly intelligent composer, as evidenced by such originals here as the arresting *Ahmad the Terrible*, a whimsical and virtuosic tribute to the great Jamal. Recommended. P.G.

EURHYTHMICS: *Be Yourself Tonight.* Annie Lennox (vocals, keyboards); David Stewart (guitars, keyboards); vocal and instrumental accompaniment. *Would I Lie to You?; Sisters Are Doin' It for Themselves* (with Aretha Franklin); *Conditioned Soul; Adrian;* and four others. RCA AJL1-5429 \$8.98, © AJK1-5429 \$8.98, © PCD1-5429 no list price.

Performance: *Power-packed*
Recording: *Hot*

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Franklin on *Sisters Are Doin' It for Themselves*. If that isn't a regal display of vocal power, I don't know what is. "Be Yourself Tonight" is perhaps the Eurythmics' most satisfying record yet as the band moves away from the electronic-future sound of their first album and closer to a legitimate funk-soul style. It boasts two strong dance numbers, *Would I Lie to You?* and *I Love You Like a Ball and Chain*, that rank with *Sweet Dreams (Are Made of This)* as the band's best. Lennox's performances are soulful and entirely convincing, and David Stewart, Black Prince of guitar, contributes delirious, high-distortion fills and screaming wah-wah leads that inject enough voltage into "Be Yourself Tonight" to short out Con Edison. *M.P.*

RODNEY FRANKLIN: *Skydance*. Rodney Franklin (piano, synthesizers); vocal and instrumental accompaniment. *Fiesta*; *Destiny*; *Song for You*; *Children*; and two others. COLUMBIA FC 39962, © FCT 39962, no list price.

Performance: *Fulfilling*
Recording: *Very good*

Pianist and composer Rodney Franklin seems to have found his groove as a creator of readily accessible pop-fusion music that is richer in harmonies and fundamentally more musical than most

of such material these days. For "Skydance," he drew inspiration from many sources, beginning with the high-spirited Spanish flavor of *Fiesta*.

Since Franklin is not a singer, he conveys his lyrics through able but unidentified vocalists, making his presence felt in sharply articulated statements on acoustic piano, which he plays with an undeniable verve, or synthesizers. His love ballad *Song for You* is affectingly sweet, and *Children* is a moving anthem to the little people. The title track is a robust tribute to the past magic of now drought-stricken Africa. The instrumental effects here are stunning, and the message comes through strong and clear. On this album we hear a mature Rodney Franklin, whose every note or lyric is underscored by sincerity. *P.G.*

GILBERTO GIL: *Human Race*. Gilberto Gil (vocals, guitar); orchestra. *Raça humana*; *Vamos fugir*; *Tempo-rei*; *Indigo Blue*; and five others. WEA INTERNATIONAL WEA 1805 \$8.98, © WEAC 1805 \$8.98 (from JEM Records, 3619 Kennedy Rd., South Plainfield, NJ 07080).

Performance: *Good*
Recording: *Good*

Gilberto Gil is supposed to be one of the leading exponents of Tropicalia, a fusion of Brazilian pop, American rock,

reggae, and international jazz. But his latest release, "Human Race," struck me as outright commercial Latin music with a few dashes of all of those styles thrown in for musical "color." Gil is a persuasive performer with an interesting vocal style, and his guitar work is excellent. In this set, though, he comes across as a singer of more than moderate interest in only one of his big numbers, *Vamos fugir*, which has a wailing pop chorus in the background. *P.R.*

REBA MCENTIRE: *Have I Got a Deal for You*. Reba McEntire (vocals); Pake McEntire (background vocals); instrumental accompaniment. *I'm in Love All Over*; *She's Single Again*; *Have I Got a Deal for You*; *Only in My Mind*; *She's the One Loving You Now*; and five others. MCA • MCA-5585 \$7.98, © MCAC-5585 \$7.98.

Performance: *Flawless*
Recording: *Super*

Before Reba McEntire won the Triple Crown of country-music awards—CMA, ACM, and *Music City News*—for Female Vocalist of the Year, she had racked up an impressive set of albums that proved her to be one of the most masterly and distinctive singers in country music. None of those albums, however, match up to this one. "Have I Got a Deal for You," produced by Jim-

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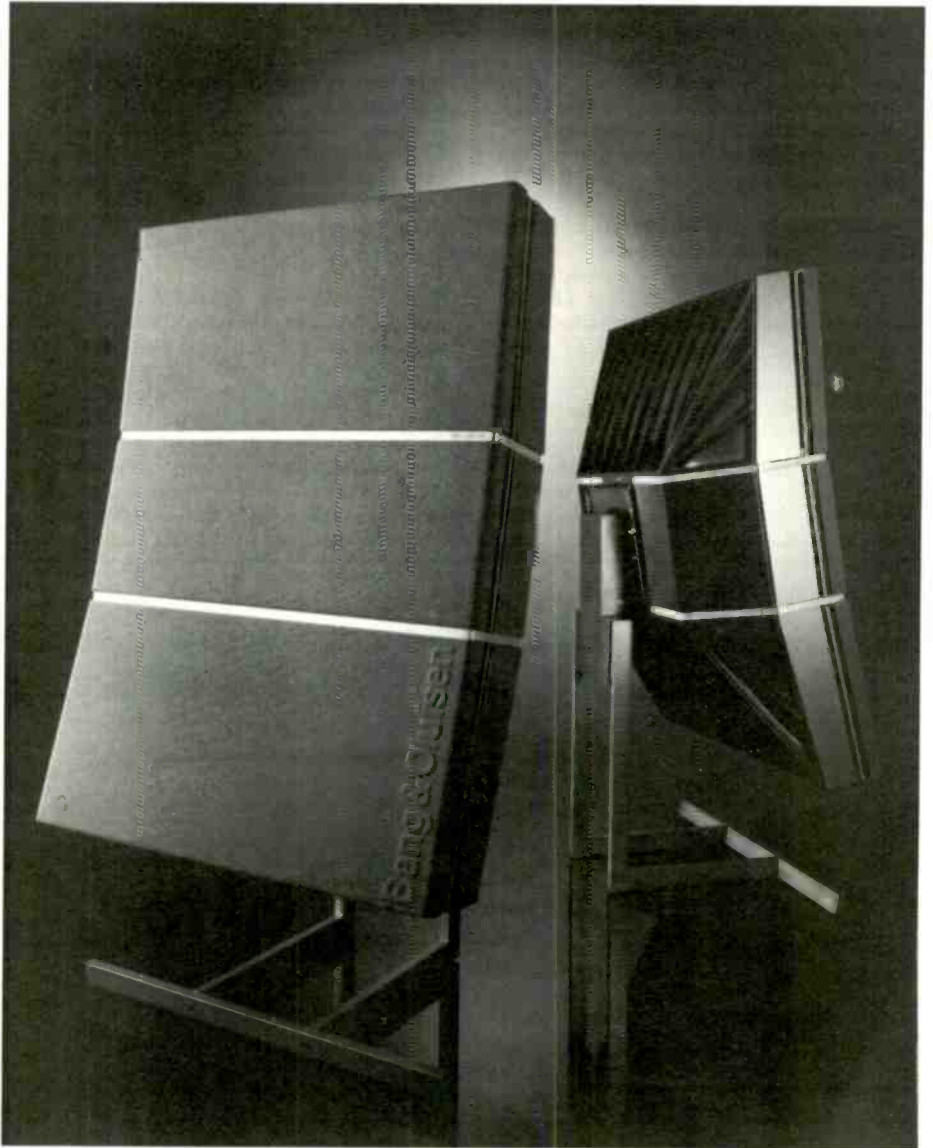
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my Bowen and co-produced by the singer herself, is the first of McEntire's albums to really harness her ebullient energy and spunk.

The songs, a perfect passel of tunes about love in all its maddening phases, are strong, and McEntire wrote or co-wrote the best of the lot, *Only in My Mind* and *She's the One Loving You Now*, revealing strengths that could propel her to even greater heights in her profession. On top of this, the picking on the album is exemplary; the background vocals by McEntire's brother, Pake, have that eerie precision that only familial harmony can approach; and the engineering, in MCA/Nashville's first digital recording, is clean and sparkling. In short, "Have I Got a Deal for You" is a honey of a bargain and a heck of a record. *A.N.*

MELISSA MANCHESTER: *Mathematics*. Melissa Manchester (vocals); orchestra. *All Tied Up; Victims of a Modern Heart; Energy; The Dream; Night Creatures*; and five others. MCA MCA-5587 \$8.98, © MCAC-5587 \$8.98.

Performance: *Good*
Recording: *Good*

Melissa Manchester has gotten so sleek over the last years, so stylishly coiffed, so "with it," that at any moment I

expect her to turn up with her own exercise video or an announcement that she and Sonny Bono are engaged. Not that she isn't still a good singer, with an interesting approach to lyrics, particularly those in which she can express some emotional involvement, but the glitz seems to be outpacing the sincerity nowadays. Quincy Jones was the executive producer for "Mathematics," and with his particular brand of gloss on the proceedings the album sounds more than a bit mannered. It's a good record, but it could have been better. *P.R.*

JANE SIBERRY: *No Borders Here*. Jane Siberry (vocals, guitar, keyboards); instrumental accompaniment. *The Waitress; I Muse Aloud; Dancing Class; Extra Executives; Mimi on the Beach*; and four others. DUKE STREET/A&M OA-0302 \$8.98, © OT-0302 \$8.98.

Performance: *Mad*
Recording: *Good*

A waitress is unable to enjoy herself at parties because she can't keep from going around picking up the empty bottles. A girl at the beach watches as her friend, perched offshore on a pink surfboard with a picnic lunch and a parasol, floats away. These are two of the inhabitants of the strange world of Jane Siberry, a Canadian vocalist who combines the unblinking, guileless storytelling

style of Laurie Anderson, and the three-octave leaps of Kate Bush with jazz-based compositions that recall another Canadian singer, Joni Mitchell.

Siberry's special charm is not so much her consistently offbeat view of life as her habit of tossing in the humorous or absurd while discussing something quite commonplace. Throughout "No Borders" she comes across as a sensitive, vulnerable woman who is up against a world that's too fast, too slick, and too cagey for her—but who is saved from the funny farm by a streak of cheerful insouciance that makes its appearance with impeccable timing. *Mimi on the Beach* is a remarkable example, a surrealist collage of the real and the imagined—loud, posturing jocks, posing nymphets, and a mystical sun and sky that swallow up the song's heroine.

If Siberry's persona is somewhat frail, there's nothing delicate about her music. Her band is a tight jazz unit, and most of these songs race along at breathless tempos, occasionally pulling up abruptly, as if to sneak by a sleeping guard, then dashing along again. Siberry's more than a match for the tricky tempo changes, stepping in and around the dancing percussion with ease, confidence, and spunk. *M.P.*

TALKING HEADS: *Little Creatures* (see Best of the Month, page 71)

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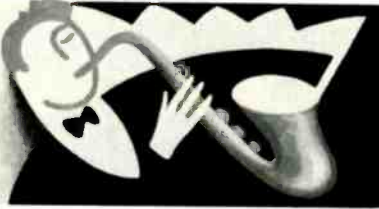
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Performance: *Excellent*
Recording: *Fine remote*

This double album of blues on Compact Disc captures a concert that took place at Lincoln Center's Philharmonic Hall during the 1973 Newport in New York festival. It was originally issued in vinyl form on the Buddah label, and in my review in these pages I said that it documented "one of the finest blues con-

certs this city has seen in recent years." That still holds true, only now, as a Mobile Fidelity Original Master Recording on CD, everything sounds much better.

Some of the highlights are "Big Mama" Thornton belting out two of her hits, *Little Red Rooster* and *Ball and Chain*; violinist Claude Williams and Jay McShann in Arnett Cobb's *Smooth Sailing*; pianist Lloyd Glenn's mellow *After Hours*; and faithful renderings of classic solo numbers by Meade Lux Lewis and Pinetop Smith. Muddy Waters's three numbers still sound fine, and B. B. King's one selection, *Outside Help*, still sounds weak. Even better than I remember are Eddie "Cleanhead" Vinson and Clarence "Gatemouth" Brown. C.A.

CHICK COREA/STEVE KUJALA: *Voyage*. Chick Corea (piano); Steve Kujala (flute). *Mallorca*; *Free Fall*; *Hong Kong*; and two others. ECM © 25013-1 \$9.98, © 25013-4 \$9.98.

Performance: *Palatable*
Recording: *Excellent*

To his credit, pianist Chick Corea has never settled into any one particular groove. I haven't liked all the directions he's taken, but I've found that most of his music makes for pleasurable listening. The same can be said of "Voyage,"

which features Corea's acoustic piano in successful combination with Steve Kujala's flute. Kujala, a member of Corea's sextet, more often plays the saxophone, but flute-and-piano duets became a popular feature of the sextet's program.

The music here has more in common with modern "classical" music than it does with jazz, although two of the compositions, *Diversions* and *Free Fall*, are totally improvised. It will nudge your sensitivities more gently than, say, a Mondrian painting at first sight, but, like a Mondrian, the music of Corea and Kujala holds surprises that are not revealed in one sitting. C.A.

FRIEDRICH GULDA: *Gulda Plays Gulda*. Friedrich Gulda (piano). *Variations*; *For Paul*; *Children's Song No. 19*; *Prelude and Fugue*; *Sonatina*; and two others. PHILIPS © 412 115-1 \$10.98, © 412 115-4 \$10.98, © 412 115-2 no list price.

Performance: *Premeditated*
Recording: *Excellent*

Austrian pianist Friedrich Gulda became fascinated with jazz thirty-five years ago, when he made his American concert debut at Carnegie Hall. Six years later, he was performing at Birdland, but he never became much of a jazz pianist. "Gulda Plays Gulda" is the *(Continued on page 103)*

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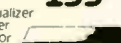
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THE SONGS OF SONDHEIM

COMPOSER-LYRICIST Stephen Sondheim has been turning out music for more than twenty-five years, and while not all of it is memorable, his work has rarely been less than interesting. Most of Sondheim's hits trace their origin to the Broadway stage, and a handful have found their way into the standard ballad repertoire.

Sondheim's songs are not the predictable kind of Broadway show tunes that people will be whistling well into the next century. There is an engaging quality about most of them, but still—and here fans will rise in protest—a little Sondheim goes a long way. It took me a couple of weeks to get through two recently released boxed sets that collectively contain more than ninety performances of his songs from such hit shows as *Company*, *A Funny Thing Happened on the Way to the Forum*, *Sweeney Todd*, and *A Little Night Music*; surviving material from less successful shows like *Anyone Can Whistle* and *Follies*; tunes from *The Frogs*, which was performed in the Yale University swimming pool; and material from shows that were never produced at all, from a television drama, and from his scores for a couple of films. These are indeed a couple of mixed bags.

Book-of-the-Month Club's three-disc album, "Sondheim," consists of new, digitally recorded material. The singers include people who have performed in Sondheim shows on Broadway, but their names are not exactly household words. Fortunately, this has not the slightest bearing on how well they sing. In fact, they sing rather nicely, but producer/engineer Max Wilcox has recorded them at such low levels that you have to strain to hear Sondheim's clever lyrics. Add to that the sharp clicks and pops of the LP pressings submitted for review. The Compact Disc and cassette versions will not, of course, be marred by extraneous noises, but I suspect the voices will be just as deeply buried.

Perhaps the most interesting feature of the Book-of-the-Month set is the suite of dances from *Pacific Overtures*, six tunes "recomposed" by Sondheim to form a single work that occupies one full side of an LP. The orchestration, created especially for this album by William Bruhn and performed by a full symphony orchestra, is dazzlingly beautiful, and the sound on the CD version should be spectacular.

The second set, "A Collector's Sondheim," is an RCA release compiled by Thomas Z. Shepard, who makes it quite clear that the selections reflect his personal taste. They were recorded over a period of several years and include many original-cast performances, so the contents are considerably more varied

than they are in the Book-of-the-Month set. The technical approach in this case favors the singers.

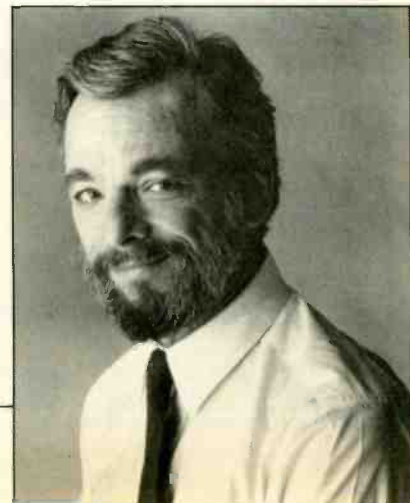
Adding particular interest to the four-record RCA set are the songs from shows that never made it as well as several tracks omitted from the original releases, usually because the song was cut from the stage production. There's even an out-and-out disco track, Gordon Grody's version of *The Ballad of Sweeney Todd*, as the album's only example of an attempt to bring Sondheim to the youthful masses that ring record-company cash registers the loudest. While it's not bad as disco fare goes, it sticks out like a sore thumb in this collection of otherwise middle-of-the-Great-White-Way sounds.

The RCA set also takes the lead in its accompanying notes. The album-sized illustrated booklet contains most of the lyrics, the producer's foreword, and informative notes on the music. Book-of-the-Month's annotation is skimpy by comparison, but it does contain an insightful interview with the composer, a sentence or two on each song, and brief backgrounds on the artists.

Chris Albertson

A COLLECTOR'S SONDHEIM. Millicent Martin, Liz Callaway, Len Cariou, Hermione Gingold, Suzanne Henry, Bernadette Peters, Jean Simmons, George Hearn, Angela Lansbury, Ann Morrison, Stephen Sondheim, others (vocals); instrumental accompaniment. Selections from *A Funny Thing Happened on the Way to the Forum*, *Stavisky*, *Sunday in the Park with George*, *Pacific Overtures*, *Follies*, *A Little Night Music*, *Sweeney Todd*, *Company*, and others. RCA CRL4-5359 four discs \$43.92, © CRK4-5359 four cassettes \$43.92.

SONDHEIM. Joyce Castle, Timothy Nolen, Debbie Shapiro, Mary D'Arcy, Betsy Joslyn, others (vocals); instrumental accompaniment. Selections from *Sweeney Todd*, *Pacific Overtures*, *A Little Night Music*, *Merrily We Roll Along*, *Reds*, *Anyone Can Whistle*, *Follies*, *Company*, and others. **BOOK-OF-THE-MONTH** • 81-7515 three discs, © 91-7516 two cassettes, © 11-7517 two CD's, no list price.



NICK SANGIAMO/RCA RECORDS

slightly misleading title of a new album in which the pianist performs five of his own compositions and two by Chick Corea—but not as well as Chick Corea, if you get my drift. His own compositions are pleasant, uneventful pieces that wander back and forth between jazz and classical music, never quite reaching the core of either. C.A.

SUSANNAH McCORKLE: *Thanks for the Memory.* Susannah McCorkle (vocals); Al Klink (tenor saxophone); Phil Bodner (clarinet, alto saxophone, flute); Keith Ingham (piano); Chris Flory (guitar); other musicians. *Diamonds Are a Girl's Best Friend; True Blue Lou; Havin' Myself a Time; My Cutie's Due at Two to Two; Beyond the Blue Horizon; In Love in Vain; My Ideal;* and six others. PAUSA 7175 \$7.98.

Performance: *Superb*
Recording: *Excellent*

"Thanks for the Memory" may well be Susannah McCorkle's best effort to date. Like all but one of her previous sets, it is dedicated to the work of a single songwriter, and here it is lyricist Leo Robin. You will undoubtedly recognize such standards as *My Ideal, Diamonds Are a Girl's Best Friend, Beyond the Blue Horizon*, and the title tune. But McCorkle also has a wonderful ear for fine, rarely heard material like *True Blue Lou* (1929), a tune Ethel Waters and Mae Barnes also knew how to handle; *A Rainy Night in Rio* (1946); and Robin's first hit, a 1926 novelty called *My Cutie's Due at Two to Two*. McCorkle sings them all with characteristic insight, wit, and smoothness, ably helped along by a back-up group that includes pianist Keith Ingham and guitarist Chris Flory. C.A.


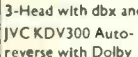
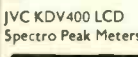
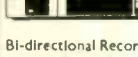
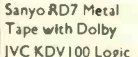

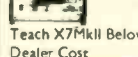
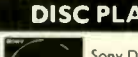
PHIL WOODS: *Live from New York.* Phil Woods (alto saxophone); Hal Galper (piano); Steve Gilmore (bass); Bill Goodwin (drums). *Prelude to a Kiss; Long Ago and Far Away; Very Early;* and two others. PALO ALTO PA 8077 \$8.98, © PA 8077C \$8.98.

Performance: *Excellent*
Recording: *Fine remote*

"Live from New York," the latest and, we are told, the final Palo Alto album by the venerable Phil Woods Quartet, was recorded at the Village Vanguard on October 7, 1982, a day before "At the Vanguard," which appeared on the Antilles label a couple of years ago. Here again the quartet plays a brisk set of non-nonsense jazz. From the boppish bounce of John Carisi's *Springsville* and Bud Powell's *Webb City* to the slithery, Hodges-like *Prelude to a Kiss*, this entire set is a joy. Thanks to engineer Chris Fichera, it is also superbly recorded. Woods, pianist Hal Galper, bassist Steve Gilmore, and drummer Bill Goodwin each contribute a paragraph or two to the liner notes, which include this request from the leader: "Thanks for buying this record and please, tape it only for truly needy people." C.A.

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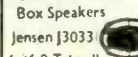
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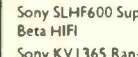
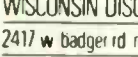

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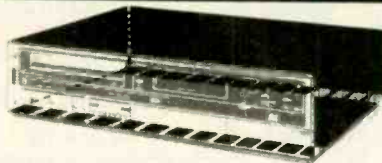
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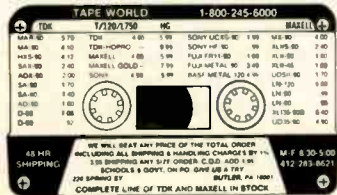
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Technics

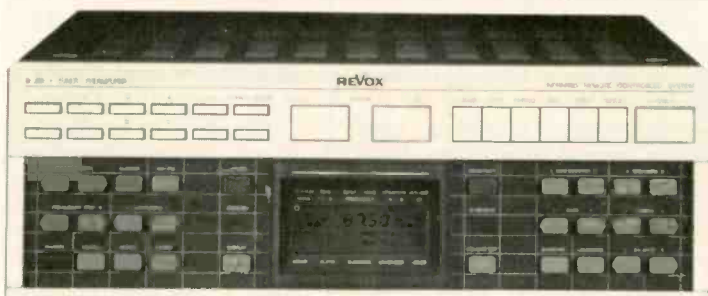
The Technics SA-560 AM/FM audio/video receiver, which has a built-in tuner and decoder for stereo TV broadcasts, is rated to deliver 70 watts per channel into 8 ohms with total harmonic distortion of 0.007 per cent. It has three tape inputs, one of which can be used for a VCR, as well as inputs for a Compact Disc player, a video tuner, cable TV, and a turntable. Presets are provided for eight AM and eight FM stations. Memory scan samples each programmed station for approximately 4 seconds.

A backlit LCD readout shows the received AM or FM frequency and the TV or CATV channel. Other displays indicate the power output and the status of various controls and selectors. Stereoplex circuitry simulates stereo sound



from mono video sources by phase adjustment of the middle frequencies. Defeatable video sound equalization rolls off the high and low frequencies

with limited-bandwidth sources. Price: \$550. Technics, Dept. SR, One Panasonic Way, Secaucus, NJ 07094. **Circle 127 on reader service card**



Revox

The B286 digital-synthesis tuner-preamplifier from Revox can be used with headphones, powered speakers, or a separate power amplifier and speakers. The microprocessor-controlled unit has only soft-touch buttons; there are

no knobs or switches. A liquid-crystal display on the front panel shows the status of seventeen functions. Most of these can be controlled from the supplied infrared remote unit, including power, source selection, station scan-

ning and recall, speaker selection, volume, loudness compensation, balance, and 20-dB muting.

The B286's microprocessor has a nonvolatile memory, and it can be used to preset any of thirty-four different volume levels for up to twenty-nine AM or FM stations and five line-source inputs as well. The tuner covers the FM band in 25-kHz increments, the AM band in 1-kHz increments. FM usable sensitivity in mono is given as 1.2 microvolts. Alternate-channel selectivity averages 96 dB, and the stereo signal-to-noise ratio is 80 dB. Price: \$1,400. Revox, Dept. SR, 1425 Elm Hill Pike, Nashville, TN 37210.

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Bang & Olufsen

Designed to harmonize visually with other Bang & Olufsen components, the CDX Compact Disc player has a motor-driven lid that opens for insertion or removal of a disc. An illuminated display on the sloping front panel shows the number of tracks on the disc, the tracks programmed for playback, and the number of the track being played. A second display is switchable between elapsed time for the current track,

elapsed time for the disc, and both the current track and the index number (if any). A numerical keypad allows direct access to any track on the disc. Up to forty tracks can be programmed for random playback, and each track can be programmed four times, for a total program of up to 160 tracks.

The CDX uses four-times oversampling, with a resampling frequency of 176.4 kHz, and both digital and analog filtering. An accessory switch box with two inputs is provided for use with a receiver that has no extra input available. Price: \$699. Bang & Olufsen of America, Dept. SR, 1150 Feehanville Dr., Mount Prospect, IL 60056.

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Sony

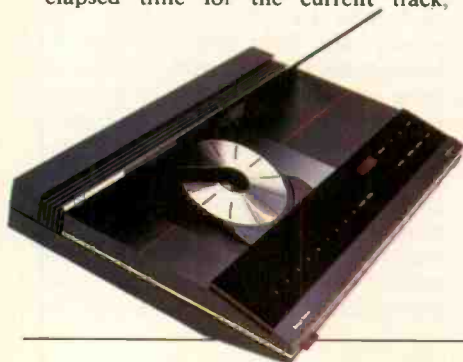
The new line of Sony audio cassettes, from normal-bias to metal formulations, can be recognized by the wide-window shell design, which makes it easier for users to check the tape's



motion and see how much is left on each hub. Parallel-ribbed liners and stepped hubs are said to insure even tape winding.

The normal and high-bias tape formulations use new Super Crystal Gamma ultrafine magnetic particles. The smaller, more uniform particles are said to be evenly dispersed with the high-polymer binding system, thus reducing bias noise and increasing the maximum output level by up to 1.5 dB. The leader at the ends of the tape is said to clean the tape heads. Prices range from \$3.15 to \$11.50 for C-90 cassettes. Sony Tape Sales, Dept. SR, Sony Dr., Park Ridge, NJ 07656.

Circle 130 on reader service card



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OCTOBER

TECHNICAL TALK (Continued from page 31)

Which System Is Best?

We've answered our original question: Why use a noise-reduction system at all? But now other questions arise, such as: Which noise-reduction system (if any) is the "best"? And are there situations where *none* of them should be used?

The expanded dynamic range afforded by any of these systems gives you more leeway in setting recording levels. Without noise reduction, cassette recordings must be made at the highest tolerable levels in order to keep the softest passages well above the noise.

With Dolby B, you should probably keep your maximum recording level about where it was and use the 10-dB improvement principally for noise reduction. Dolby C lets you set your recording level a few decibels lower, reducing the compression at high levels that often robs a cassette recording of openness and clarity. At the same time, it reduces tape noise more than Dolby B.

The dbx system should be used when you intend to play the tapes through your own system or another equipped with dbx decoding. It makes recording virtually independent of gain-control settings. In most cases you can even forget about your recorder's level-meter readings. They can be far off scale without approaching a significant amount of distortion. And noise will be totally absent, as you can verify by dubbing an LP or an FM broadcast with several different recording-level settings. Even if you set the level so low that the meters do not register, you will probably find that no audible noise has been contributed by the recorder.

With either Dolby C or dbx, it is possible to tape a Compact Disc onto cassette with near perfect results. No doubt that is the rationale for including dbx decoding in some car-stereo tape players, although the situation may change as automobile CD players become more widely available.

Disadvantages

You should be aware, however, that there is no "free lunch" in the area of noise reduction. Under some circumstances, any of the three popular noise-reduction systems can introduce audible artifacts such as "pumping" of the noise background with changes in the lev-

el of the signal. In general, the more noise reduction a system provides, the more subject it is to these effects. The seriousness of the problem is also highly dependent on the program characteristics. A percussive sound, such as a solo piano, emerging from a relatively low, but still audible, background of hiss can carry with it a "swish" of noise that might prove to be more annoying than a steady hiss.

The Dolby systems are relatively free of this effect if the recorder circuits are adjusted properly and the deck's basic frequency response is flat enough to afford good encode/decode tracking (these requirements are somewhat more critical with Dolby C because of its greater noise-reduction capability). Although the dbx system is not level dependent, and is thus free of the kind of tracking problems that can affect Dolby performance, it *is* critically dependent on having identical compression and expansion slopes. This is a property of the dbx circuits themselves, and there is little the user can do either to create such a problem or to correct it if it occurs.

It is hard to imagine a situation where you would not wish to use *some* form of noise reduction, assuming that your equipment is able to provide it. Virtually every cassette deck made in the past fifteen years or so has included at least Dolby B, and a Dolby B tape can be played back quite well on a deck having no noise reduction. At most, you might wish to cut back the treble a little with the tone control if the tape sounds too bright, although I have rarely found even that to be necessary. And Dolby C tapes are listenable with only Dolby B decoding. Only dbx recordings are totally unsuited for playback without decoding.

The Dolby and dbx noise-reduction systems have become so much a part of hi-fi technology that no one today who is serious about sound quality would consider using a cassette deck without at least one of them. All of them work well, and each has its own strengths and weaknesses. You will find that at least Dolby B comes "free" with any deck you choose; if one or both of the other systems is also included, you are that much better off. Although I have restricted my discussion here to these three popular noise-reduction systems, there actually are some systems that *do* reduce the noise already in the program. But that is another story. □

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by Christie Barter
& Steve Simels

FIRST seen on Broadway ten years ago as Dorothy in *The Wiz*, Stephanie Mills has followed her own yellow brick road to the multi-media stardom she enjoys today. One of her recent projects was a video of her hit single, *Bit by Bit*, the theme music of the current Chevy Chase film *Fletch*. But she has spent most of her time and energy lately on her first album for MCA, scheduled for release this month. Mills served as executive producer of the album, working with a number



June Anderson: top billing

upwards of 15,000 people. She's also used to making hit records. When RCA imported copies of her latest album, "Gal Profana" (see review, page 92), from Brazil to sell over the weekend of her two New York concerts early this summer, it sold out in a matter of days, which caught the people at RCA a little off guard. But they are rectifying that situation by releasing the album domestically—and by making arrangements for a Gal Costa tour in this country next year.

Costa was one of over fifty Latin recording stars who participated under the name Hermanos (Brothers) in making the single *Cantare, Cantaras (I Will Sing, You Will Sing)* to support relief and development projects through UNICEF and USA for Africa. Others in the group were Roberto Carlos, Vikki Carr, Plácido Domingo, José Feliciano, Julio Iglesias, and the group Menudo. □

THE name Demis Roussos surfaced in the U.S. early this summer when the Greek singer was discovered among the hostages on that TWA jet hijacked by Lebanese terrorists. It surfaced again recently when 21 Records, distributed by Atlantic, rereleased a 1981 Roussos single bearing a particularly appropriate title: "Freedom of Running, Freedom to Fly (Race to the End)." The tune is by Vangelis, the words by Jon Anderson. An album is in the works. □

ANOTHER name that's beginning to turn up regularly on records and tapes is

that of June Anderson—with top billing. A native of Boston and a Yale graduate (with a B.A. in French lit), Anderson has been working her way up through the ranks on opera stages both here and abroad and is now hitting the big time—in roles that most sopranos, with established careers or not, would consider definitely "alternative."

Anderson made her Paris Opéra debut this summer, reportedly stopping the show twice when she sang the leading soprano role opposite Samuel Ramey in Meyerbeer's *Robert le Diable*. She returns to the U.S. this fall to sing at the Chicago Lyric in Handel's *Samson*, then returns to Europe for debuts at La Scala in March (Bellini's *La sonnambula*) and at Covent Garden in April (Rossini's *Semiramide*).

Angel Records' October release schedule is headed by the first recording of Bizet's *La Jolie fille de Perth*, with June Anderson in the title role. Philips has just released another first-timer, the even more recondite *Maometto Secondo* of Rossini, with Anderson in the leading soprano role (her recording debut, in

MONTEVERDI'S *Orfeo* would certainly win no popularity poll running against an opera like *Carmen*, but it's getting pretty much



Quilico: multi-media Orpheus

the same media treatment right now that the perennial favorite by Bizet was getting a year or so ago.

Generally considered the first piece of music theater that can properly be described as an opera (the date of the first performance was 1607), *La favola d'Orfeo* was recorded by Erato in February, in a Carthusian abbey near the French town of Avi-



JACKI SALLOW



RCA RECORDS

Mills (top) and Costa: aiming high

of different producers for one or more tracks. It's a role that many top recording artists play today, but for a black woman it represents something of a breakthrough. □

WHEN Gal Costa, one of Brazil's most popular singers, was making plans for her U.S. debut, she decided to do it right—with not one but two concerts at Carnegie Hall. Not every singer aims that high for a first time out before a new audience, but Costa is used to filling arenas seating



LESLIE FRANKIN

The Vipers: a Psychedelic Revival is sweeping the nation

fact, was in the Philips recording of Rossini's *Mosè in Egitto* two years ago). And she goes into EMI's Paris studios this fall to record Adolphe Adam's comic opera *Postillon de Lonjumeau*. You can hardly get more alternative than that. □

gnon, with Gino Quilico in the title role and Michel Corboz conducting. It was then filmed, using the Erato recording as a soundtrack, at Rome's Cinecittà studios in a co-production involving the state-owned radio and television networks of Italy, Swit-



erland, France, and Canada. Using the same production and musical forces, it was staged in France with great success at this summer's Aix-en-Provence Festival.

The Erato recording of *Orfeo* is being released in the U.S. this month by RCA. A television special and ultimately a home video can't be too far off. □

JOURNEY TO THE CENTER OF YOUR MIND DEPARTMENT: The near ubiquity of the *Vipers* these days is just one indication of the Psychedelic Revival that is currently sweeping the garages and rock clubs of the nation. Aging groovers with fond memories of the lysergically influenced music of their youth should certainly check out the *Vipers'* latest album, "Outta the Nest" (PVC). And for a taste of the real thing we also recommend another remarkable artifact, *96 Tears Forever*, by Question Mark and the Mysterians on a ROIR cassette. A reunion concert by the original members of the band responsible for the grungiest three-chord song of the Sixties, the live recording captures the boys in front of an enthusiastic Dallas crowd. □

TWO years ago we reported that the first of Aldo Ciccolini's six albums of piano music by Erik Satie was the sixth best-selling album in the entire Angel catalog—and that Ciccolini's Satie recordings, taken together on both LP and tape, had sold well over a quarter of a million copies, making Satie the best-selling twentieth-century composer on the label.

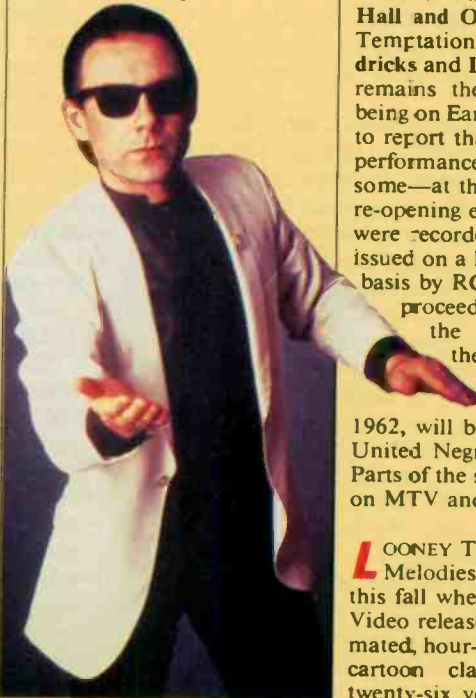
Both statements remain as true today as they were then, not only for Angel, but also for other EMI companies around the world. So it is easy

Ciccolini: back to Satie



to understand why Ciccolini is currently engaged in rerecording the complete Satie set digitally for Pathé Marconi, EMI's French affiliate.

Celebrating his sixtieth birthday this year, Ciccolini is in this country right now fulfilling several concert dates, including a recital in



Fripp: hanging in

San Francisco. The only work on his program is the complete *Harmonies poétiques et religieuses* of Liszt, a set of ten pieces Ciccolini has also recorded for Pathé Marconi.

He is also finishing an album of Satie's songs in which he accompanies Mady Mesplé, Nicolai Gedda, and Gabriel Bacquier. □

GUITAR hero and musical theorist Robert Fripp may look like a cross between a karate instructor and a soft-shoe artist here, but he hasn't deserted his fans. Passport has just released two videos by Fripp and the re-formed King Crimson—*The Noise*, from a show taped in France in 1982, and *Three of a Perfect Pair*, from a 1984 Japanese concert. Both videos are available in either VHS Hi-Fi or Beta Hi-Fi at a suggested retail price of \$29.95 each.

The record division of

Passport has issued digitally remastered versions of Fripp's remarkable "Network" and "League of Gentlemen" albums. □

SPEAKING as a couple of viewers who thought the high point of the Live Aid telecasts was the team-up of Hall and Oates with former Temptations Eddie Kendricks and David Ruffin (who remains the coolest human being on Earth), we are happy to report that the first public performances by that foursome—at the Apollo Theater re-opening earlier this year—were recorded and are being issued on a limited-time-only basis by RCA. A part of the proceeds from the set, the first live-from-the-Apollo album since James Brown's in 1962, will be donated to the United Negro College Fund. Parts of the show will be seen on MTV and Cinemax. □

LOONEY TUNES and Merrie Melodies will fill the air this fall when Warner Home Video releases nine fully animated, hour-long programs of cartoon classics. Spanning twenty-six years through the mid-Fifties, the selections will include cartoons that won and were nominated for Academy Awards as well as

the men who made the cartoons, Friz Freleng, Chuck



What's Opera, Doc?

Jones, and Mel Blanc. One of Blanc's, cited by an international jury as one of twenty all-time best animations, is *What's Opera, Doc?*, a parody of Wagnerian opera. Elmer Fudd stars as Siegfried, Bugs Bunny as Brünnhilde. □

GETTING our vote for the most innovative and intelligent video of the year is *Take On Me*, the debut of Norwegian pop band A-Ha. The video combines live action and animation in an unusually skillful way (the band members pop in and out of a penciled comic strip), and though the premise is as old as Buster Keaton's *Sherlock Jr.*, it's never been so well executed in under five minutes. If you don't have MTV, however, don't fret: the clip is



Lead singer Morten Harket in A-Ha's video debut

pre-War rarities. The tapes will carry a suggested retail price of \$19.98 each.

Three of the nine programs will sample the finest work of

being released in theaters, where it will be opening for *Back to the Future*, *Mad Max: Beyond Thunderdome*, and the rerelease of *E.T.* □

PASSPORT VIDEO

J. D'HUGHES/EMI PATHÉ MARCONI

WARNER HOME VIDEO

WARNER BROS. RECORDS

by Christie Barter and Gordon Sell

DAT?—MAYBE NEXT YEAR

An expected decision on a Digital Audio Tape (DAT) standard has been put off for another year by the EIAJ (Electronic Industries Association of Japan). Several key factors have been agreed on: The record-playback sampling rate will be 48 kHz, with 32 kHz optional, and a 44.1-kHz rate will be available for playback only to prevent consumers from making digital copies of Compact Discs. The key question, whether to go with rotary or stationary tape heads, has yet to be resolved. In the meantime, don't be too surprised if one or more of the manufacturers jumps the gun and introduces a rotary-head machine within the next six months. If so, it will probably have an 8mm-based tape head and mechanism, but the tape itself will be in a shell slightly smaller than an 8mm shell.



BILLY JOEL/COLUMBIA RECORDS

CD TRACKS

Mobile Fidelity is breaking into rock and pop with a batch of catalog items licensed from A&M for release as Original Master Recordings on Compact Disc. Titles include Joe Cocker's "Mad Dogs & Englishmen," the Tubes' debut album (called simply "The Tubes"), and Procol Harum's "A Salty Dog." . . . MCA is combing through the old Impulse jazz catalog, acquired from ABC, from which selected titles will be digitally remastered and released on CD as well as LP and tape. . . . Angel has gone back to its vaults for a collection of

operas on CD featuring the late Maria Callas. The first is the soprano's classic *Tosca*, recorded in 1953 under the direction of Victor de Sabata. . . . The two-CD set of Billy Joel's "Greatest Hits" includes twenty-five cuts (four more than the LP version) and costs somewhat less than two CD's ordinarily would—an effort on the part of CBS to pack "greater value" into some of its new CD's.

CONGRESSIONAL RECORD

John Philip Sousa's *The Stars and Stripes Forever* is being considered in Congress for designation as the national march. Representative James H. Quillen of Tennessee, apparently mindful that the United States has a national anthem but no march, is reportedly sponsoring a bill that would give Sousa's popular march official status. Sousa wrote the music for the band of the U.S. Marines and for his own touring band. He first played it before President William McKinley in Philadelphia on May 14, 1897. . . . Before recessing for the summer the House passed a resolution awarding Congressional Gold Medals posthumously to George and Ira Gershwin. Only two other American songwriters have been so honored, George M. Cohan and Irving Berlin.

VIDEO CLIPS

The latest Pioneer Artists video LaserDiscs incorporating both a digital stereo soundtrack and a CX-encoded analog track are Tina Turner's *Live Private Dancer*, filmed in England during her 1985 spring tour, and *This Is My Night*, a concert by Chaka Khan filmed at the Hammersmith Odeon in London. . . . *The Beach Boys: An American Band* from Vestron has a CX-encoded stereo track and is captioned for the hard of hearing. . . . New 8-inch LaserDiscs from Pioneer are Golden Earrings' *Notorious Videos* and Stephanie Mills's *Television Medicine*. . . . Music videos recently certified Gold by the RIAA were *Iron Maiden—Video Pieces*, released by Sony Video Software, and the Police's *Synchronicity Concert* from A&M Video.

FOCUS ON JUILLIARD

A PBS Special on October 5 originating from the Juilliard School in New York marks the first time the famous performing-arts institution has come under the camera's gaze in the network's Live from Lincoln Center series. Featuring appearances by many eminent Juilliard alumni, the program celebrates the school's eightieth anniversary with a look at four major components of the curriculum: dance, drama, chamber music, and the orchestra.



TECH NOTES

The tape-tax supporters are at it again with a House bill calling for royalty payments of 10 percent on normal tape decks, 25 percent on dubbing decks, and one cent per minute of playing time for blank tape. . . . In two years more than 250,000 General Motors cars have been equipped with the Delco-GM/Bose Music System—that's over a million speaker/amplifier enclosures. . . . ITT has developed some integrated-circuit chips for digital stereo-TV audio processing. The chips convert the broadcast audio signal to digital audio and then perform stereo/SAP decoding before converting back to analog. Only the dbx expansion is done in analog mode. . . . NBC is said to be planning extensive stereo TV offerings for this season. A variety of shows are being produced with stereo sound, including many of the daytime soap operas, feature movies, programs ranging from *Punky Brewster* to *Saturday Night Live*, and sports events, perhaps including the Indy 500. . . . JVC has come up with a VHS answer to SuperBeta. Called "High Quality VHS," it is said to improve the resolution and reduce video noise on VCR's equipped with it. The first JVC deck with the feature should be available this fall or early winter. . . . Citing limited consumer interest, Sanyo has suspended distribution of its 8mm video system.

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