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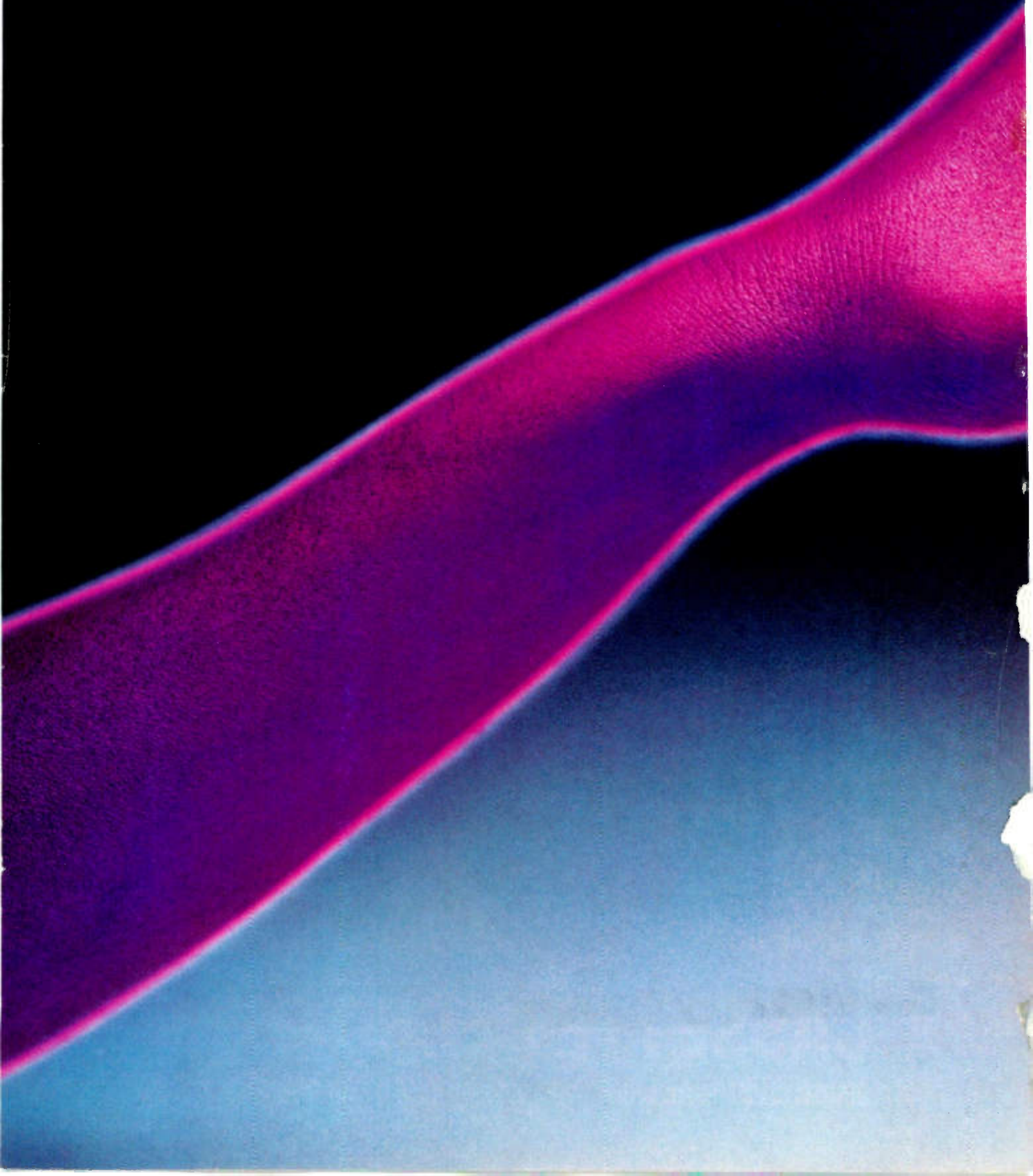


DECK TESTS

Wood KX-780 Technics RS-B85



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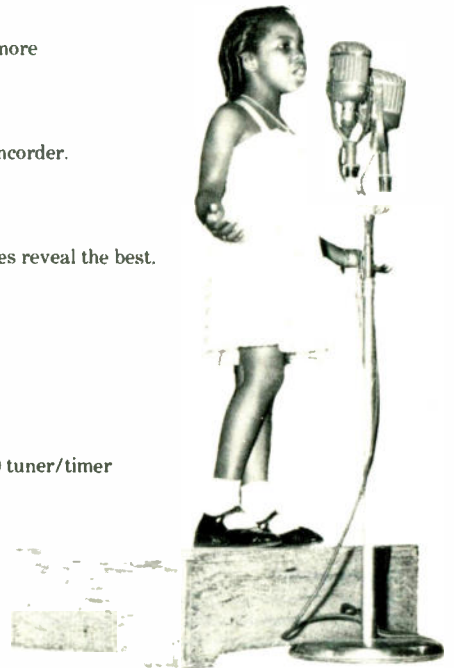
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EDITOR'S PAGE

by William Tynan



From humble beginnings

Especially since the arrival of personal-portable players, the cassette medium has become part of the daily lives of many music lovers. We record our own tapes or buy prerecorded ones and are free to listen to them while jogging, while commuting, or in the comfort of our homes. Very few audio systems are without some form of cassette deck.

Yet it wasn't long ago that audiophiles scoffed at the cassette, regarding it as a low-fi medium best suited for dictation—and in the late '60s, they were right. But times have changed. HIGH FIDELITY's first equipment report on a cassette deck was published in 1970, with initial tape tests following in 1973. Over the years, we have evaluated well over a hundred decks—including the four in this issue—and periodically sampled the latest crop of tapes.

Robert Long, consulting technical editor, has supervised all of these tape samplings, gathering newly introduced cassettes as well as established products whose formulations have been significantly revised. Since 1978, tests have been conducted about every two years. The sixth installment appears this month, offering individual appraisals of 30 different cassettes. Long also provides a comprehensive review of how we test the tapes and points out the major changes in formulation and shell construction that have occurred since our last sampling in August 1983. Each batch of tests produces its surprises, and this time around it's the premium Type 1 tapes, which emerged with the best price/performance ratio of the lot.

Video coverage this month includes our first lab test of an 8mm videocassette recorder. And you'll find another of Robert Angus's field tests in "8mm Delight," an evaluation of Sony's new camcorder.

CLASSICAL MUSIC goes to the movies again as Noah André Trudeau looks at the "cycle" of James Bond film scores, many of which are the work of one composer, John Barry. Meanwhile, R. D. Darrell takes us along on a summer walkabout to the music of *The Portable Mozart*, a comprehensive library on 16 cassettes.

Okay, trivia experts, this one's for you: BACKBEAT offers 50 hard-rock questions to challenge your long- and short-term memory. If you know what the Clash, Meat Loaf, and NBC's *Night Court* have in common, you're off to a good start. And be sure to send us your answers!

Looking ahead to next month, we'll have a complete wrap-up of new products introduced at the Summer Consumer Electronics Show, as well as our annual "Preview of the Forthcoming Year's Recordings."

Play the hits. With no errors.

By now, you're probably familiar with the virtues of compact discs. The wide dynamic range and absence of background noise and distortion. And the playback convenience.

Yet as advanced as the medium is, it's still not perfect.

Which is why you need a compact disc player as perfected as Yamaha's new CD-3.

The CD-3 uses a Yamaha-developed tracking servo control LSI to monitor its sophisticated 3-beam laser pickup. This LSI makes sure that horizontal and vertical tracking accuracy is consistently maintained. And that even small surface imperfections like fingerprints or dust will not cause tracking error and loss of signal.

Even more rigorous servo tracking control is provided by a unique Auto Laser Power Control circuit. Working with the tracking LSI, this circuit constantly monitors the signal and compensates for any manufacturing inconsistencies in the disc itself.

Then we use another Yamaha-developed signal processing LSI that doubles the standard 44.1 kHz sampling frequency to 88.2 kHz. This over-

sampling allows us to use a low-pass analog filter with a gentle cutoff slope. So accurate imaging, especially in the high frequency range, is maintained.

We also use a special dual error correction circuit which detects and corrects multiple data errors in the initial stage of signal reconstruction.

So you hear your music recreated with all the uncolored, natural and accurate sound compact discs have to offer.

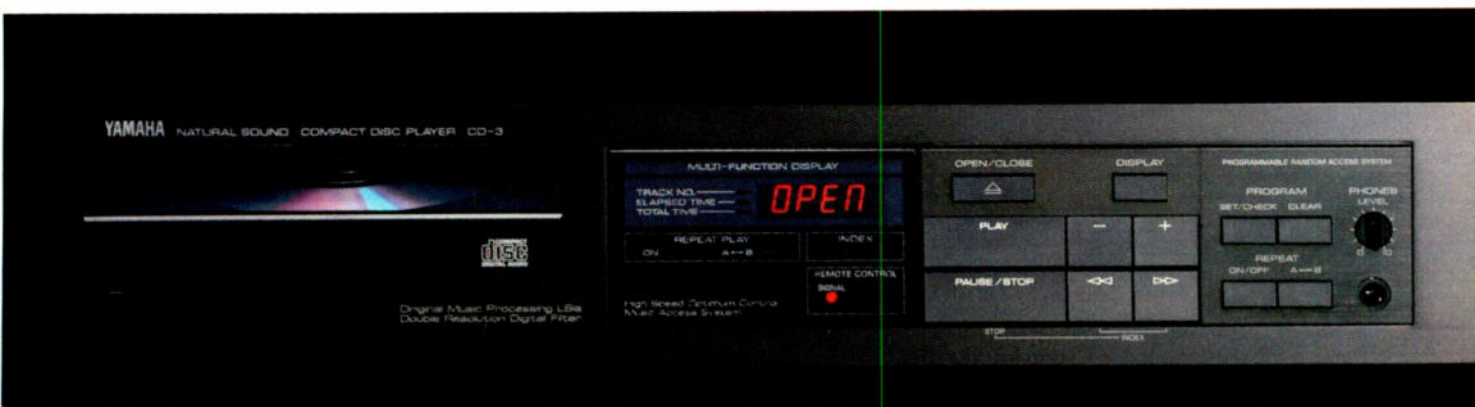
Another way the CD-3 makes playing the hits error-free is user-friendliness.

All multi-step operations like random playback programming, index search, and phrase repeat are performed with ease. And visually confirmed in the multi-function display indicator.

And the wireless remote control that comes with the CD-3 allows you to execute all playback and programming commands with the greatest of ease.

But enough talk. It's time to visit your Yamaha audio dealer and tell him you want to play your favorite music on a CD-3. You can't go wrong.

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Musician Magazine

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Connecticut Al Franklin's Musical World: Greenwich • **Audio Den:** New Haven • **Audio Design:** Fairfield • **Audioponica:** Newark • **Hi Fi Stereo House:** Avon • **Newington • Robert's The Music People:** Grotton, New London

Maine Harbor Audio Video: Camden

Massachusetts Glass Sailboat: Gloucester • **Sound II:** N. Dartmouth • **Waltham Camera & Stereo:** Waltham (Boston)

New Hampshire Audio of New England: Concord, Laconia • **Cuomo's:** Salem • **North Star Electronics:** New London

New Jersey AC Audio & Video: Raritan • **Atlantic Stereo:** E. Brunswick • **Bryn Mawr Stereo:** Maple shade • **Franklin Lakes Stereo:** Franklin Lakes • **Monmouth Stereo:** Shrewsbury • **Parade Radio:** Montclair • **W. Caldwell • Randa's Camera:** Toms River • **Sounding Board:** Ridgewood

New York Absolute Sound: Amherst • **Audio Breakthroughs:** New York City (Manhattan) • **Huntington • Manhasset • Audio General:** Glens Falls • **Clark Music:** Albany • **Syracuse • Electronic Workshop:** New York City • **Hart Electronics:** Vestal • **JB Sound:** Rochester • **Listening Room:** Scarsdale • **Studio One:** Fredonia, Jamestown

Pennsylvania Bryn Mawr Stereo: Bryn Mawr (Philadelphia Sub) • **Camden Hill • Frazier:** Jenkintown • **Montgomeryville:** Quakertown • **Whitehall (Allentown) • G n T Stereo:** Lancaster • **Hart Electronics:** Blakely • **Kingston • Pro Audio:** Windber • **Robert M. Skidels:** Williamsport • **Sound Concepts:** Altoona • **Indiana • Stereo Land:** National Heights • **Stereo Shop:** Sebring • **Studio One:** Erie

Rhode Island Eastern Audio: N. Providence

Vermont Audio Dan: Burlington

SOUTHEAST

Alabama Audition: Birmingham • **Hollywood • Campbell's Audio Video:** Huntsville • **Fidler Hi Fi:** Mobile • **Gaylor's:** Tuscaloosa

District of Columbia Myer Emco • **Florida** Audio By Caruso: Miami • **Audio Insight:** Ft. Lauderdale • **Audio International:** Ft. Walton Beach • **Audio Tech:** Jacksonville • **Orange Park • Audio Vision:** Tampa • **Electronic Connection:** W. Palm Beach • **Fidler Hi Fi:** Pensacola

Pyramid Audio: Clearwater • **Sound Shack:** Ft. Pierce • **Lakewood • Southern Audio:** Melbourne • **Merritt Island • Stereo Store:** Tallahassee • **Sympathetic Ear:** Miami

Georgia Audio Warehouse: Savannah • **Stereo City:** Augusta • **Stereo Village:** Atlanta • **Duluth Morrow Smyrna:** Tucker

Kentucky FM High Fidelity: Owensboro • **Hi Fi Buys:** Louisville • **Maryland** Evergreen Audio: Frederick • **Myer Emco:** Rockville • **Soundscapes:** Baltimore • **Spaceway's:** Sound: Annapolis

Mississippi Empress: Gulfport • **Pascagoula • Walters Audio:** Jackson

North Carolina Audio Buys: Raleigh • **Mr. Todd's Stereo Video:** Asheville • **Stereo Video:** Charlotte • **Tri City Electronics:** Concord

South Carolina John Brookshire: Anderson • **Stereo Shop:** Greenwood • **Spartanburg**

Tennessee College Hi Fi: Chattanooga • **Hi Fi Buys:** Nashville • **S. Madson • Lindsey Ward:** Knoxville • **Mr. Todd's Stereo Video:** Johnson City • **K. Niggett • Opus II:** Memphis

Virginia Audioponica: Roanoke • **Digital Sound:** Virginia Beach • **Lindsey Ward:** Richmond • **Mr. Todd's Stereo Video:** Bristol • **Myer Emco:** Falls Church • **Sound Machine:** Charlottesville

West Virginia Pied Piper: Barboursville • **Beckley • Huntington • Wheeling Sound:** Wheeling

NORTH CENTRAL

Illinois Aien's Creative Stereo: Bloomington • **Northbrook • Shaumburg • Vernon Hills • Waukegan • Audio Plus:** DeKalb • **Columbia Audio Video:** Buffalo Grove • **Hoffland Park • Rockford • Glenn Poppel:** Champaign • **Normal • Hi Fi Hutch:** Villa Park • **Midwest Hi Fi:** Sterling • **Northwest Audio Video:** Crystal Lake • **Simply Stereo:** Mt. Prospect • **Stereo Design:** Riverdale • **Sundown One:** Springfield

Indiana Classic Stereo: South Bend • **Hi Fi Buys:** Greenwood • **Indiana pots:** Lafayette • **Muncie**

Iowa Audio Emporium: Sioux City • **Audio Labs:** Des Moines • **Audio Odyssey:** Iowa City • **Stereo Shop:** Cedar Rapids

Kansas Audio Electronics: Overland Park • **Audio Visions:** Wichita • **Michigan** Absolute Sound: Ann Arbor • **Royal Oak • Alma's Hi Fi:** Birmingham • **Dearborn • Farmington Hills • Audio Shoppe:** Saginaw

Court St. Listening Room: Saginaw • **Puff's:** Petoskey • **Sound North:** Iron Mountain • **Sound Room:** Grand Rapids • **Porrage • Stereo Shoppe:** Lansing • **Traverse City**

Minnesota Audio King: Brooklyn Center • **Burnsville • Edina • Minnetonka • Roseville • Mel's TV & Audio:** Duluth • **Sound Shop:** Alexandria • **Detroit Lakes • Sound World:** Austin • **Mankato • Rochester**

Missouri Johnston Audio: Columbia • **Sound Central:** St. Louis • **Stereo One:** Cape Girardeau • **Nebraska** Stereo West: Lincoln • **Omaha**

North Dakota Midwest Audio: Minot • **Pacific Sound:** Bismarck • **Ohio** Audio Craft: Cleveland • **Fairlawn • Friday • Mayfield Heights • Toledo • Westlake • Classic Stereo:** Lima • **Jamieson's:** Toledo • **Stereo Lab:** Cincinnati • **Columbus**

South Dakota Sound World: Sioux Falls • **Team Electronics:** Rapid City

Wisconsin Audio Emporium: Milwaukee • **Happy Music:** Madison • **Sound Sellers:** Marinette • **Sound World:** Appleton • **Green Bay • Lacrosse**

SOUTH CENTRAL

Arkansas Leisure Electronics: Little Rock • **Stereo Room:** Searcy • **Louisiana** Audio Fidelity: Shreveport • **Audio West:** West Monroe • **Opelousas • Stereo Village:** Baton Rouge • **Gretna • Metairie • New Orleans**

Oklahoma Audio Advice: Tulsa • **Hi Fi Shop:** Lawton • **Stereo Advice:** Stillwater

Texas Arnold & Morgan: Dallas • **Ganado • Audio One:** Austin • **Audio Tech:** Temple • **Waco • Audio Techniques:** Longview • **Brook Audio:** Beaumont • **Hamilton Bryen:** Wichita Falls • **Atlanta Audio:** Gvess • **Madison • Sheffield Audio:** Houston • **Sound Room:** Amarillo • **Sound Towne:** Texarkana • **Soundquest:** El Paso • **Ultra Electronics:** Lubbock • **Walker Audio:** San Angelo

WESTERN Alaska Holt's Music: Fairbanks • **Shimek's:** Anchorage

Arizona Audio Emporium: Tucson • **Hi Fi Sales:** Mesa • **Sound Pro:** Flagstaff • **Sounds Great:** Tucson

California Absolute Audio: Orange • **Beverly Stereo:** Los Angeles • **Call Stereo Unlimited:** Fairfield • **Creative Stereo:** Santa Barbara • **Santa Maria • Thousand Oaks • Ventura • High Fidelity Shoppe:** Walnut Creek

Radio Mart: Redding • **Shelley's Stereo:** Santa Monica • **Woodland Hills • Sound Advice:** Bakersfield • **Sound Company:** San Diego • **Sound Fantasy:** Napa • **Sound Goods:** Campbell • **Sounding Board:** Berkeley • **Sounds By Dave:** Chico

Stereo Store: San Francisco • **Systems Design Group:** Redondo Beach • **World Electronics:** Davis • **Sacramento • World of Sound:** Mill Valley • **San Francisco**

Colorado Soundtrack: Arvada • **Aurora • Boulder • Denver • Littleton • Sunnshine Audio:** Colorado Springs • **ueblo • Westminster Stereo:** Boulder

Hawaii Stereo Station: Honolulu • **Mahe Audio Warehouse:** Twin Falls • **Electcraft:** Sandpoint • **Stereo Shoppe:** Boise

Montana Rocky Mountain Hi Fi: Great Falls • **Spectrum:** Missoula • **Thrifty Ear:** Bozeman

Nevada Upper Ear: Las Vegas

Oregon Bradford's High Fidelity: Eugene • **Royal Mobile Sound:** Pendleton • **Sound Chamber:** Klamath Falls • **Stereo Superstore:** Beaverton • **Portland • Janzen Beach**

Utah Boyers Audio: Provo • **Broadway Music:** Salt Lake City

Washington Definitive Audio: Seattle • **Hi-Fi Stereo:** Spokane • **QC Stereo Center:** Bellingham • **Mr. Vernon • Oak Harbor • Northwest Audio Video:** Bellevue • **Lynnwood • Seattle • Tukwila • Tin Ear Stereo:** Richland

Wyoming Sound Room: Riverton • **Team Electronics:** Cheyenne

LETTERS

FLYGIRL "GOBBLEDYGOOK"

Having been successful at interpreting computer manuals, Marvel comics, and *Mad* magazine, I thought I had mastered the English language. Silly me! "A Flygirl Fights Back" ["Medley," June] sets a new plateau of gobbledygook that puts IRS tax forms to shame. I hope you will publish the translated version in an upcoming issue.

Michael L. Fisher

Newton, Mass.

Perhaps, after simplifying the tax code, President Reagan can have a talk with Roxanne Shanté. Until then, take heart. This flygirl protagonist's admirers—the kids who've turned her teasing, angry "Roxanne's Revenge" from a homemade rap tape into a national hit—share a common trait with her detractors. In her words, "You're all stuck up!"—Ed.

DISGRUNTLED CD BUYERS

Robert Angus's "CD Availability: The Line Forms to the Right" ["Currents," June] struck a responsive chord. When I first got my Compact Disc player, I sold all 450 of my records and tapes and went down to a local store to buy the 20 CDs that I had to have. Now, the same store doesn't carry even one that I want. In fact, I have to go 20 miles out of my way to find a good CD. It's too bad that I already have Bruce Springsteen's *Born in the U.S.A.*, because that local store has 37 of them (I counted!), plus ten unopened cases of John Fogerty's *Centerfield*.

Also, last February I did a backflip when I discovered *The Wall* on a two-CD set (Harvest). But I had to return three copies because the hole was off-center, and the store refused to exchange my fourth set, which was similarly defective. For \$26.99, Pink Floyd fans deserve better!

P.S.: Warner Bros.'s CD of Prince and the Revolution's *Around the World in a Day* has the worst packaging in recording history.

William Schneider, Jr.

San Jose, Calif.

Compact Discs have been on the U.S. market for only two years, and already one major label, Warner Bros., is trying to cut corners by abandoning the standard plastic "jewel box" in favor of a paper container, which makes its debut with the new release by Prince and the Revolution. I urge readers who own CD

players to write the penny pinchers at Warner Bros. (3300 Warner Blvd., Burbank, Calif. 91510) to let them know that this substitution is unacceptable, before their ill-advised move starts an industrywide trend. If we act quickly enough, they can be made to back down—just like Capitol had to in the early Seventies following negative consumer reaction to its harebrained attempt at packaging prerecorded cassettes in paper containers.

Phil Cohen

Bay Harbor, Fla.

HF REVIEW SYMBOLS: CLEARING UP THE RECORD

Through February, HIGH FIDELITY reviewed new Compact Discs in a separate part of the magazine and commented on both performance and sound quality. Since then, CDs have been incorporated into your regular review sections, and these sections now employ a set of symbols to denote the reviewed format and the other available formats for each recording.

This would be fine if the LP and CD versions of every performance sounded about the same. But various reviews in your magazine and other publications have made it clear that some CDs are marred by shrill, strident highs, even when the sound quality of the LP version is excellent.

Let's suppose that the reader comes across an LP review of a recording that is also available on Compact Disc, and let's suppose that the text contains no negative comment on the sound quality of the LP. How can the reader know whether the reviewer has listened to the CD version as well and been satisfied with its sound?

Hugh Christensen

Pittsburgh, Pa.

In those cases where the critic has listened to the Compact Disc version of a recording, we always run the story as a CD review, with the appropriate large symbol at the left margin of the heading. Therefore, the reader can assume that an article marked as an LP or cassette review is based solely on that LP or cassette and makes no claims for the sound of the CD version (if one exists). We hope to increase the proportion of CD reviews during the coming months, and we will make comparisons between CDs and their corresponding LPs or cassettes whenever feasible.—Ed.

CURRENTS

1986 Audio & Video Component Preview

We've just returned from the Summer Consumer Electronics Show as this issue is going to press. A full report on all the new audio and video components introduced there will appear in a special 12-page report next month, but here are a few appetizers.

Center-stage were Compact Disc players and the newest video format—8mm. In the CD-player department, this SCES marks the emergence of a number of companies that had been on the sidelines until now. New entrants include DBX, Audio Technica, and Harman Kardon.

Portable CD players will be available soon from companies such as Magnavox, Sanyo, General Electric, and Technics, which showed what it calls the "world's



smallest" model. The SL-XP7 (shown here being demonstrated at SCES) weighs $1\frac{1}{3}$ pounds and measures 5 inches square by $1\frac{1}{4}$ inches thick, without carrying case. Sony, which originated the portable format, will have at least two new models available.

And despite initial doubts about the ability of CD players to withstand the rigors of on-the-road operation, manufacturers are unwilling to be left out of this market. In addition to car CD players already announced, you can expect to see models before the end of the year from Kenwood, Alpine, Sanyo, Grundig, Yamaha, Fujitsu Ten, Pioneer, Audiovox, JVC, Blaupunkt, and others.

For all the pooh-poohing of the 8mm video format that was going on just a few months ago, it's apparent that many companies are paying serious attention to it now. Attracting the most interest is an 8mm video/digital-audio recorder, shown by Sony and Kodak and in prototype by Pioneer. In a way, it's the quintessential audio-video component: It uses a standard 8mm cassette (not much larger than an ordinary audio cassette) and is able to record



Attention-getters at SCES included ultrasmall, portable Technics SL-XP7 Compact Disc player (above) and prototype Pioneer 8mm video/digital-audio deck (below left).

either two hours of video (with a stereo digital soundtrack) or 12 hours of PCM-encoded audio. And Sony has shown a two-speed version, which could accommodate as much as four hours of video or 24 hours of audio. A more detailed look at how all this is accomplished will appear next month.

Briefly, trends in other product categories show the continued integration of audio and video, into either single components or multicomponent systems; more video components capable of handling stereo broadcast signals; and more audio components, including speakers, specifically engineered to handle the special sonic demands of the Compact Disc. *W.T.*

Encore for DIGICON

Two years after its successful first DIGICON conference, the International Computer Arts Society is sponsoring DIGICON '85 in Vancouver, British Columbia, August 15-17. Hardly a junket for hackers, DIGICON has been the source of some of the most fascinating experimentation around in state-of-the-art computer-music technology.

This year's premier event, called *Overture 2000*, will attempt the first recording of a live performance by one group whose members are geographically separated and also the first transcontinental satellite teleconcert, illustrating the real-time long-distance communications capabilities of MIDI, the Musical Instrument Digital Interface. (MIDI enables properly equipped keyboard and guitar synthesizers, drum kits, sequencers, and some external computers to communicate through a simple

data-transfer protocol.)

As the plan stood at press time, one group of performers will be onstage in Vancouver, the second group in a recording studio in either Quebec or New York City. Two channels of PCM-encoded audio will be stacked and transmitted on one T-1 satellite channel; five to eight separate MIDI data streams will be multiplexed into a single data stream and put on a second satellite channel via a high-speed modem; and two separate video feeds, one from the performance cameras, the other used for synchronization and cueing, will be multiplexed onto a third channel. All channels are expected to be relayed via ANIK C3. The audience in Vancouver will see and hear the live performers and, on a large video screen, the remote performance.

In addition to this special event, a series of workshops and seminars are scheduled throughout the three days. For further information on registration, contact ICAS, 5997 Iona Dr., Vancouver, B.C., Canada V6T 2A4.

Polk's Super SDA: The Signature Reference

Founded in the early '70s by three Johns Hopkins graduates, Polk Audio has gone on to become one of America's most successful loudspeaker manufacturers. Part of the reason is just plain hard work and good basic product design, but innovation also has played an important role. When we reviewed the company's first Stereo Dimensional Array loudspeaker, the SDA-1, in January 1983, we were very excited

COURTESY: EIA/CEC



Is this any way to listen to your stereo?

If you listen to an ordinary stereo, you're not hearing very well. Because most speakers distort the original sound. The reproduction you get is uneven and inaccurate. So you might as well be wearing earmuffs.

The reason why is that the average speaker depends on a conventional cone driver. Now cones may be great for ice cream, but they don't give you the true flavor of great music.

You see, sound waves are distorted by the cone's shape and come to you unevenly. In fact, they're usually biased toward the low-end of the scale.

So what you really hear is the cone's interpretation of the original. Prince's cone, for instance, instead of Prince. Or

Rubinstein's version of the "Moonlight Sonata" as interpreted by the cone.

The Dynawave series from Sawafuji America Corp. gives you the real thing. These sophisticated speakers use Dynapleats, a

patented driver system developed after years of research in flat-wave technology. This revolutionary system allows sound to come off evenly and simultaneously from the entire surface of the driver.

Just listen to the difference.

The flat-wave sound is virtually free of the distortion caused by cone drivers. It's a natural, full, rich sound with superb imaging, wide dynamic range and accurate repro-



Revolutionary dimensions:
6 1/2" x 6 1/2" x 1"

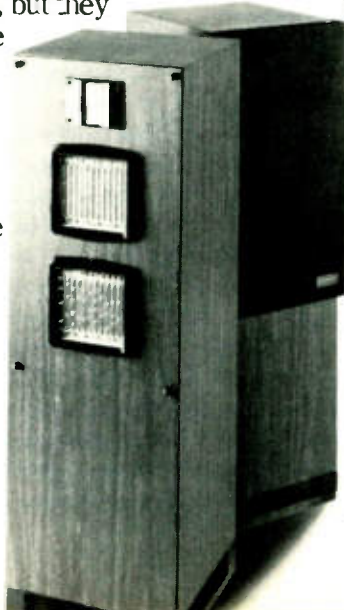
duction throughout the frequency range. And it's about as close to the real Bach or B.B. as you can get.

These speakers look as good as they sound. Because the flat-wave drivers are slimmer and relatively light,

they permit a more elegant and stylish cabinet design. A proper setting for the music you love.

The Dynawave series makes this revolutionary sound technology available at popular prices for the first time. There are three unique models to choose from. And each one gives you music the way it was really meant to be heard.

So the next time you listen to a great symphony or classic ballad, you can enjoy the unmuffled version.



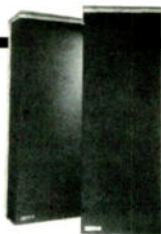
DYNAWAVE[®]
Sawafuji America Corp.

23440 Hawthorne Blvd. Torrance, CA 90505
(213) 373-0620

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Matthew Polk (right) explains unique driver and crossover design of his new Signature Reference System speakers (above) to HF Technical Editor Michael Riggs.



by what we heard. Its novel driver configuration, designed to cancel interaural crosstalk, produced a remarkable, sometimes eerily convincing stereo image.

Since then, the company has continued to refine the SDA concept, and the line has expanded to three models: the SDA-1A, the SDA-2 (test report, June 1984), and the bookshelf SDA-CRS. Now comes a fourth—the third-generation Signature Reference System, or SDA-SRS. The signature is designer Matthew Polk's, on a small plate near the top of the enclosure, which is five feet four inches tall. Each speaker has a single 15-inch passive radiator and a total of 12 active drivers: four 1-inch dome tweeters and eight 6½-inch low-frequency cones, all designed and manufactured by Polk. Unlike previous SDA models, each SRS uses only a single array of tweeters, driven by a straight

left- or right-channel signal. There are, however, two columns of bass/midrange drivers, one of which is fed a "dimensional" (L-R or R-L) signal, which is responsible for the system's unusual imaging capabilities. Polk says that it has found that extending the dimensional signal up into the high treble is unnecessary and sometimes even undesirable.

The SRS's other distinguishing feature is that each driver array is designed to operate as a vertical line source. Acoustically, each functions as though it were a single tall, narrow driver. The result is a dispersion pattern that is wide horizontally but fairly narrow vertically. This reduces reflections off the floor and ceiling that would interfere with the direct sound from the loudspeaker, introducing coloration and degrading the stereo image.

A potential problem with this ap-

proach is that at very high frequencies, the tweeter array's vertical dispersion tends to become so narrow that small changes in the height of the listener's ears (when sitting down or standing up, for example) could drastically alter the sound quality. Polk's solution is an ingenious crossover that removes drivers from the array, one at a time, as the frequency increases, while boosting the drive level to the remaining tweeters to maintain flat response. Thus, at the top of the range, only a single tweeter is still operating. The company calls this a Progressive Point-Source Tweeter Array.

The SDA-SRS is a high-sensitivity system designed to work with amplifiers rated at 50 to 1,000 watts (17 to 30 dBW) per channel. Separate inputs for the high- and low-frequency arrays (normally strapped together with jumpers) permit biamp or biwire operation. Finished in oiled oak or walnut, the speakers will be available in a limited edition this September at \$2,590 per pair. A brief, informal audition in unfamiliar surroundings suggested that these may be the best SDAs yet; certainly they are impressive and worthy of Matt Polk's signature. For more information, contact Polk Audio, Inc., 1915 Annapolis Rd., Baltimore, Md. 21230. *W.T.*

A Compact Disc Washer

With a major share of the LP-cleaning market under its belt, Discwasher is making its first entry into the Compact Disc accessory arena with its Compact Disc Cleaner system. Though not the first to of-



fer such a product, Discwasher claims that its cleaning method is unique.

The company unveiled what it terms its "high-tech radial cleaning design" at the New York City studios of WNCN (FM), a classical music station in the forefront of those using primarily CDs in their programming. Slightly larger than a CD, the system is a self-contained, rectangu-

lar, mechanically operated device. To use it, you open the smoked-plastic lid, place a CD on the turntable inside, spray the surface with a special cleaning fluid (CD-1), close the lid, and turn a small crank on the top of the unit. The crank spins an interior wheel to which a cleaning pad is mounted. As this wheel counterrotates against the revolving disc, dirt and debris are removed.

Discwasher asserts that the pad contacts a CD at an angle that is precisely perpendicular to its encoded spiral track, which is the recommended cleaning method. (LPs, on the other hand, normally are cleaned with a circular motion.) Competitive products, Discwasher says, do not sweep the CD in a true radial path.

Priced at \$19.95, the system includes a spray bottle of CD-1, a replacement cleaning pad, and a cleaning-pad grooming brush. For further information, contact Discwasher at 1407 N. Providence Rd., Box 6201, Columbia, Mo. 65205.

Motown Autosound: Chapter Two

By the end of the summer, JBL and the Ford Motor Company will push the pedal to the metal as they roar into high gear on a five-year joint program to develop high-performance sound systems for Ford and Lincoln-Mercury cars and light trucks in North America. Formal announcement of the project in June followed extensive work by both companies; the final technology agreement is set to be signed by the end of July, at which time the specifics of the plan will be disclosed. Basically, JBL will provide the speaker systems, and Ford the electronics.

Ford manufactures automotive sound systems at facilities in the U.S., Canada, and Brazil; JBL has sold its own line of car speakers for some time. Detroit's first foray into serious car stereo was the Delco-GM/Bose system, which was introduced two years ago.

"My high-tech training gives me something I didn't have back home. A high-tech future."

SP4 Wayne Haney, Telecommunications

"I knew I needed a high-tech skill to compete in today's world, but none of the jobs back home in Cedar Rapids, Iowa, offered me the kind of training I wanted.

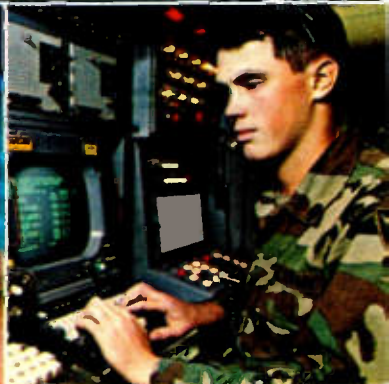
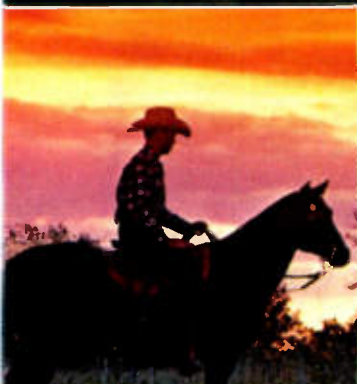
"I found exactly what I was looking for, in the Army.

"It's funny how things happen sometimes. I visited an Army Recruiter one day and told him what I wanted. He tested me, and said I qualified for a lot of high-tech skills. They all sounded pretty good, but electronics sounded the best.

"So here I am, Wayne Haney, working with electronic switching systems."

Army service is helping Wayne Haney prepare for a brighter future. And it can do the same for you. For more information, see your Army Recruiter. Or call toll free 1-800-USA-ARMY.

**ARMY.
BE ALL YOU CAN BE.**



MAXELL TAKES COMPACT DISC QUALITY OUT OF THE LIVING ROOM.



Ah, the comforts of home. They're tough to leave behind. Especially when it comes to things like your compact disc player.

But even though you might not be able to take the player with you, you can take the brilliant sound quality. If you record your compact discs on Maxell XL-S cassettes.

By producing smaller, more uniform magnetic particles, we can pack more of those particles on the tape surface. Which makes it possible to record more information on a given area of tape.

As a result, AC bias noise is greatly reduced. And maximum output levels are significantly increased. In fact, the dynamic range of XL-S is expanded so much, it can capture everything from the subtle passages to the extreme bursts inherent to compact discs.

So record your compact discs on Maxell XL-S.

Then you can enjoy their sound quality wherever you feel at home.



IT'S WORTH IT.

© 1985 Maxell Corporation of America, 60 Oxford Drive, Moonachie, N.J. 07074

CROSSTALK

by
Robert
Long



OHM MY!

My Pioneer S-1010 speakers are rated at 6.3 ohms. They are driven by a Yamaha M-60 power amp, which has switching for loads of 2, 4, and 8 ohms. Which should I use?

Donald Hebbard

FPO, New York, N.Y.

Almost all loudspeakers exhibit different impedance values at different frequencies, so the match can't be exact for all frequencies. You probably won't hear any difference between the 4- and 8-ohm settings, but the latter probably is the better choice because the 6.3-ohm rating looks like a minimum.

SHIBATA SEARCH

My CD-4 system requires a cartridge with a Shibata stylus, and I've been using an Audio-Technica AT-12Sa. Every dealer I ask about the stylus looks at me like I'm crazy. Does anyone still make a Shibata? Are there any other designs I can use?

Norman Meyer

Panama City, Fla.

In theory, it's not a Shibata per se that you need, but a multiradial tip with a small enough tracing radius to track the ultrasonic CD-4 carrier, along with a stylus assembly capable of response out to such a high frequency. The Shibata tip configuration was the only multiradial available when CD-4 records first appeared. More recent refinements of the Shibata idea (and every company has one) should be

equally appropriate, but not necessarily more recent styli or cartridges themselves. Audio-Technica still stocks (but no longer advertises) replacement Shibata styli and some cartridges. For example, you can still replace your stylus, but you'll have to switch to the AT-14 if you want to buy a similar complete cartridge.

PLAY ON

To play my growing collection of 78-rpm records, I use a Thorens TD-126 Mk. III turntable with a Shure V-15 Type III cartridge, for which I have a Shure 78 stylus. I've heard that you must rewire your cartridge for 78s. Is that so, and if so, how do you do it?

Dolton W. McAlpin

Starkville, Miss.

Rewiring your cartridge usually is not necessary. If your electronics have no mono switch, you may want to bridge across the two hot terminals to combine channels, thereby canceling the out-of-phase noise generated by vertical stylus motion on laterally cut mono records. If you're playing vertically cut mono records—for which the V-15 Type III's 78 stylus is not designed and the 78 speed itself is dead wrong—you would need to reverse the hot and ground leads for the right channel.

NOT FORGOTTEN

I'm seeking a replacement for the Ampex AX-300 I bought in 1972, but I can't find a comparable model. It was a superb bidirectional open-reel deck

with three heads for each direction. I particularly appreciated the low-frequency signal that was used to change directions—the only autoreverse system that ever made any sense to me. (Stick-on foil cueing tabs are a preposterous nuisance; removal of oxide to expose the tape's Mylar backing actually damages the tape.) The AX-300 also did something to the high-frequency signals in the tape-hiss range that made copies sound better than the originals. What sort of processing was involved?

Louis K. Rothbard

Houston, Texas

Ampex consumer products were, if anything, too innovative for their own good. The neon-light level display system of the Sirties, for instance, was much more accurate and useful a device for these decks, in my estimation, than the meters that public outcry eventually forced Ampex to use instead. (The even better "magic eye" metering of early Tandbergs met a similar fate.) That's why Ampex had to quit the market shortly after you bought the AX-300.

I don't remember the processor you speak of. But frankly, when anyone says that a circuit makes tapes sound better than the originals, I turn skeptical. Usually it proves to be a question of two wrongs that (almost) make a right; get rid of one—an anomaly in the high-frequency response in your phono cartridge, for in-

stance—and the other is exposed for what it has been all along; a gimmick. As far as finding a replacement, you're going to have to settle for an inexact match (with no tone-cued automatic reverse, in particular) or take a very big gamble with a second-hand Ampex.

SWITCHED ON

Is it okay that I leave my system switched on all the time? All my friends think I'm nuts.

Perry R. Hebel

Chicago, Ill.

Your electric bills may be a bit bigger than theirs, but your equipment should last longer without the thermal shock of on/off cycles.

JAZZ TURN

I'd like to update my turntable, but I have some fine old Dixieland 78s and can find no current model to play at that speed. What can I do?

Donald W. Athearn

Concord, N.H.

Technics offers three models in its essentially professional line—with no tonearm. You can choose between the heavy-duty SP-10, either Mk. I or Mk. III, and the somewhat less expensive SP-15. Certain Thorens models, such as the TD-126 MK. III, also have 78-rpm settings, and Dual is introducing one. That's slim pickings, but you'll have to make do.

We regret that the volume of reader mail is too great for us to answer all questions individually.

BASICALLY SPEAKING

by
*Michael
Riggs*



Understanding Noise Reduction

Anyone who has a high fidelity cassette deck is familiar at least with Dolby B noise reduction, and owners of recent models probably have encountered Dolby C or DBX as well. All of these systems are designed to prevent the addition of audible tape hiss during the recording process. They achieve this by companding the signal: compressing it during recording and then expanding it in a complementary fashion during playback.

Dolby B operates only above 200 Hz (that is, across the top seven of the ten octaves in the audible band), with most of its effect concentrated in the range from 1 kHz up. When the input signal level is high, the circuit doesn't do anything; when the level falls, it introduces a high-frequency boost. The amount of equalization increases as the signal level declines, to a maximum boost of 10 dB above 5 kHz at recording levels 40 dB or more below Dolby reference level (200 nanowebers per meter for cassettes).

In playback, a reciprocal treble cut is applied to restore flat response, the exact amount being again determined by the recorded signal level. Since this expansion pushes the tape hiss down along with the signal, Dolby B has the effect of maintaining high-frequency information at a more nearly constant, high

level relative to the noise. As a result, hiss is masked by the music over a wider range of input levels than it would be without the noise reduction.

The problem with all companders is that the noise moves up and down with the music, and unless care is taken, this variation may be audible under certain circumstances. Such "hiss pumping" can be more objectionable than a steady background of noise. Pumping is most likely to occur on sharp transients rising out of silence. Isolated bass-drum whacks and solo piano music are common troublemakers. Preventing pumping requires that the compander be carefully designed. Of particular importance are the attack and release times chosen for the control circuitry, which determine how fast the compander responds to changes in signal level.

Unfortunately, it is difficult to optimize these times for all frequencies without splitting the band into several segments, each with what amounts to its own compander. Dolby B gets around the problem by operating only at middle and high frequencies, where noise is most easily perceived.

The likelihood of audible pumping also increases in proportion to the amount of noise reduction attempted. Here, too, Dolby B is conservative, providing at most 10 dB of compansion. Especially important is the fact that it stops at -40 dB, so that at very low levels, where hiss is likely to be

substantial, the compander is delivering a constant boost (during recording) or cut (during playback)—not moving the signal up and down in response to changes in its level.

Dolby B's main drawback arises indirectly from the fact that it does not operate equally at all frequencies and levels. If the playback circuit does not "know" what the actual levels were during recording, it will mistrack, causing errors in both dynamics and frequency response. For this reason, some premium cassette decks have Dolby recording calibration controls, which can be used to adjust for the varying sensitivities of different tape formulations. This ensures that all recordings made on the deck will be correctly decoded in playback.

It also is important that the deck be biased correctly for the tape used in recording and that its head azimuth match that of any tape that is played back, since any compander circuit will tend to exaggerate frequency-response errors in its range of operation. However, if everything is adjusted properly, a good Dolby recording will sound virtually identical to its source.

Dolby C is essentially a stronger, more refined version of Dolby B. It works from 50 Hz up and provides as much as 20 dB of noise reduction between 1 and 10 kHz. Although more critical of frequency-response errors and sensitivity miscalibration than Dolby B, it is otherwise equally free of side effects. But because the

B system is more tolerant of alignment and calibration discrepancies between decks, tapes made with it tend to travel better.

Unlike its more modest cousins, DBX operates across the entire audio band and the music's full dynamic range with a straight 2:1:2 compansion ratio. That is, a signal that comes in with a dynamic range of 50 dB will go onto the tape with a range of only 25 dB. Or, playback, the circuits restore the signal to its original form. DBX provides about 30 dB of noise reduction and is therefore the system of choice for most material having extremely wide dynamic range.

DBX's other major advantage is that it does not require critical level matching between recording and playback. On the other hand, its relative aggressiveness makes DBX more prone than Dolby to noise pumping. Fortunately, this usually is apparent only on music having very wide dynamic range and containing well-defined, high-amplitude transients. Not much material fits this description, and with DBX's own outboard noise reduction units, pumping rarely is a problem.

Which system should you use? It depends entirely on what you want to record, and for what purpose; each circuit has its particular strengths and weaknesses. Just remember that none of them will remove noise already present in the program to be recorded: They serve only to minimize the addition of audible tape hiss during recording. ●

Precision without complication.

At the very pinnacle of Aiwa's technological breakthroughs resides a new standard of performance. A new level of precision. A new achievement in human engineering. It is the Aiwa AD-F990B.

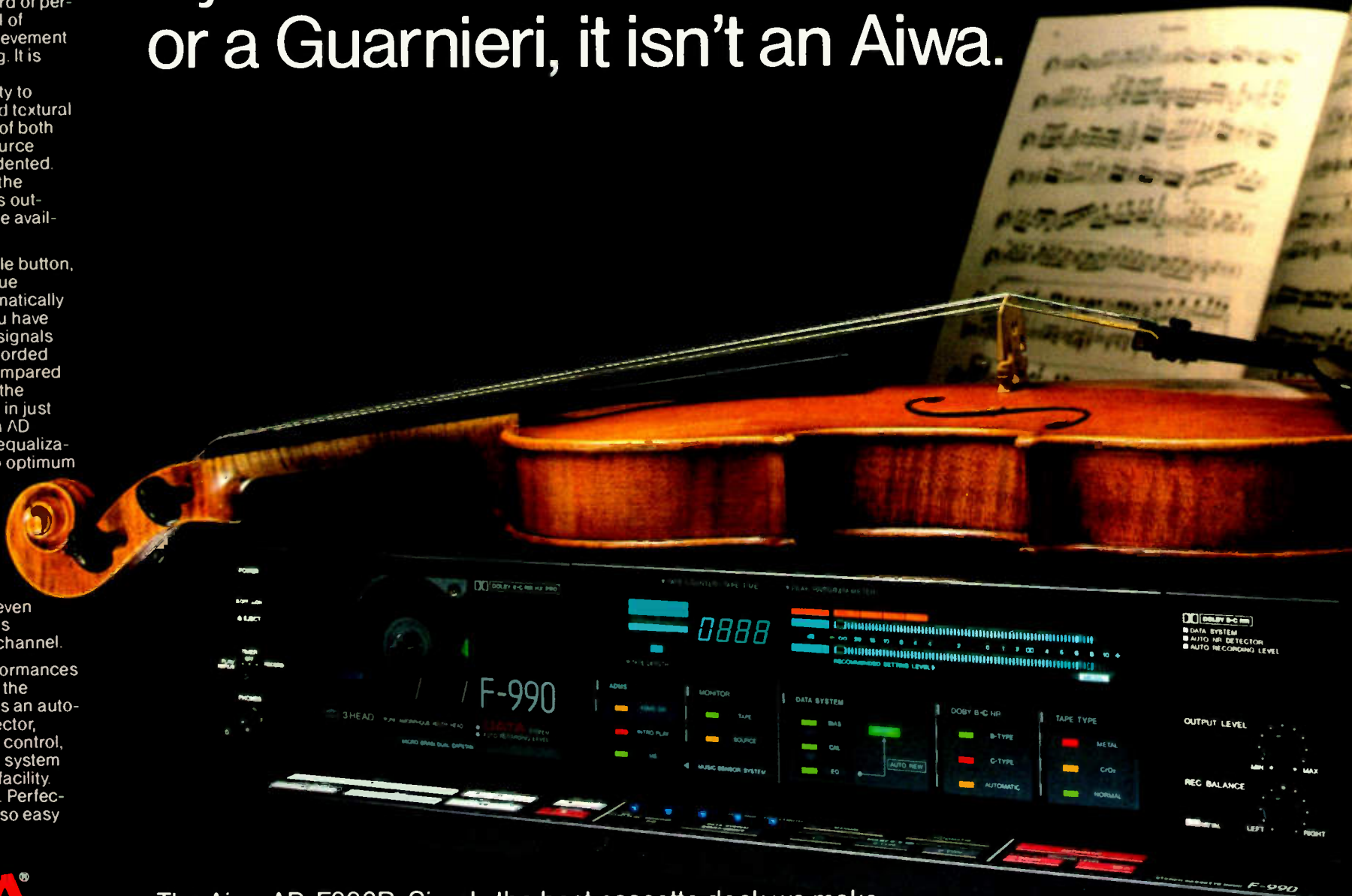
The AD-F990B's ability to meet the dynamic and textural demands of the best of both digital and analog source materials is unprecedented. The ease with which the AD-F990B makes this outstanding performance available is unbelievable.

At the touch of a single button, the AD-F990B's unique D.A.T.A. system automatically analyzes the tape you have selected. Reference signals are automatically recorded and then instantly compared to the original. Once the analysis is complete, in just 10 seconds, the Aiwa AD-F990B adjusts bias, equalization and sensitivity to optimum levels.

Through the use of Dolby HX Pro, the AD-F990B then dynamically adjusts bias levels in response to the music you record. It even adjusts the bias levels separately for each channel.

To make perfect performances even more effortless the AD-F990B also offers an auto-noise reduction detector, auto-recording level control, auto-demagnetizing system and auto-intro-play facility. The Aiwa AD-F990B. Perfection has never been so easy to achieve.

If you can't tell whether it's a Stradivarius or a Guarneri, it isn't an Aiwa.



AIWA[®]
SIMPLY ADVANCED

The Aiwa AD-F990B. Simply the best cassette deck we make.

Dolby is a trademark of Dolby Laboratories. Aiwa America Inc., 35 Oxford Drive, Moonachie, New Jersey 07074 In Canada, Shiro (Canada) Ltd.

Remote Shock Wave

Unleash 200 watts, 100 watts per channel, of incredibly pure musical power with the touch of a remote button. CPU logic control lets you have total remote control of the entire system, from the linear tracking turntable to the auto reverse cassette deck with Dolby C. And, it's all yours for \$649! Wow!

Take control. You're in the cockpit. You've got enormous power at your command. Just a slight touch of the controls will literally cause your system to explode into a kaleidoscopic panorama of musical perfection.

And, as this massive explosion of sonic splendor unfolds right in your own living room, you'll have over 110 individual controls to shape and select your musical pleasures.

In fact, to demonstrate the depth of DAK's \$649 blockbuster price, each control works out, costing you less than \$5.90. So, it's up to you if you think Dolby C is worth \$5.90. Or, how about a continuous auto reverse button?

There's repeat play on the linear tracking turntable and a hydraulic cueing control. You may not need all 8 preset stations on the FM digital synthesized tuner, but since the same buttons also give you 8 presets on AM, they each really cost half the \$5.90.

You'll also be paying for the buttons on the remote. But think of the convenience you'll enjoy when you can stop, start, record and pause your tape deck from across the room.

Plus, you'll have remote index scan, which lets you hear just the first 10 seconds of each song on a tape. Even Record Mute is controlled from the remote.

Virtually every function can be performed from the remote. You can start, stop or cue a record. You can access all 16 preset tuner memories, and of course you'll control volume, mute and switching between the components.

Just think. You'll sit back in your favorite easy chair and stop and start the tape deck as you copy records or record from FM. Wow, you'll be able to edit out commercials as they occur.

But don't let the 'gimmicks' of remote control entice you. This system with 110 RMS watts per channel, from 20hz to 20,000hz with 0.05% THD, would be a steal if you had to wind it up to make it work.

IT'S THE SOUND

From the 3-way 12" speaker systems to the beautiful rack cabinet, this system is top of the line. It's not just a conglomeration of gimmicks and a ton of power. Each component can, and is about to, stand on its own merits.

When you hear the awesome power combined with the fine detail that these fine individual components produce, you will understand why Magnavox's suggested retail price of \$999 was such a good value.



DIGITAL SYNTHESIZED TUNER

If you tape, or if you're really into FM, this incredibly stable AM and FM stereo tuner is for you.

The frequency response is from 30hz to 15,000hz, which isn't a lot better than



other fine tuners until you look at truth in packaging. Magnavox's is not plus or minus 3 to 5 db like many others. Magnavox's is +0.5db -1.5db. And, the tuner's response doesn't stop at 15,000hz.

The signal to noise is an incredible 78db and THD is only 0.08%. The stereo separation at 1000hz is 55db.

The Magnavox FM tuner is actually two tuners in one. You see, FM stations are often very close together on the dial.

Most manufactures must make their selectivity at the IF stage quite narrow. The problem with narrow IF stages is that distortion is increased.

Magnavox uses two separate IF tuner bands. Wide for when there is no adjacent station interference, and narrow where stations are close together. So, you get the best sound from all stations.

There are 8 FM presets and 8 AM presets that you can access with one touch ease. And, there's built-in backup so that you don't lose the memory during power failures.

You can step tune up and down the dial, or you can scan through your preset stations. And, there's program record.

With the use of an optional timer (like our BSR X10 system), you can preset the

tuner and the tape deck to come on and record up to 6 totally separate stations at 6 totally separate times.

So, you won't miss late night broadcasts of your favorite music. And, you won't miss broadcasts during the day

while you're at work.

LEDs show all the functions, from signal strength to memory operation. A large fluorescent frequency display lets you see the station you are on, even from across the room, which is really important when you're using the remote.

AUTO REVERSE CASSETTE

This is a full logic auto reverse cassette deck. It does everything. It has search which selects just the song you want.

If you want to hear the third song on the tape, just push the search button 3 times. If you aren't sure where the song you want to hear is, just push index scan.

The deck will automatically play 10 seconds of the first song on the tape and then fast forward to the 2nd. It will play 10 seconds and then go on until you reach the song you want.

Of course, you can have the deck play only the one song, only one side, or continuously play both sides of the cassette over and over again, forever. There's a reverse button that lets you reverse the direction of the deck at any time.

When you want to record, you'll have record mute which automatically records 4 seconds of silence on your tape for professional intros and exits.

You'll have Dolby B to play your older tapes and Dolby C to record really hiss-free tapes from now on. The deck records in one direction and plays in both. All of its movement controls, including record, pause and record mute, are duplicated on the remote.

There are selection buttons for normal, CrO₂, and metal tape. And, the peak reading LED meters and linear record level controls, let you accurately set levels



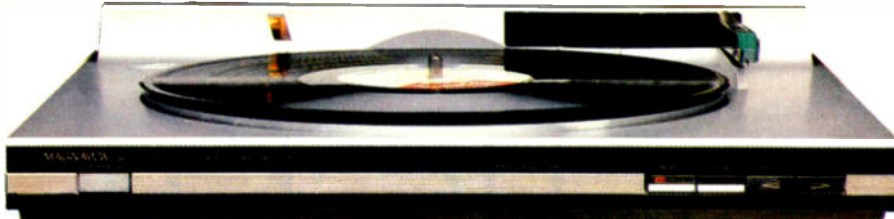
for really great sounding recordings.

You'll enjoy a wide frequency response from 40 to 15,000hz and with Dolby C, really quiet recordings.

LINEAR TRACKING TURNTABLE

This fully automatic turntable will reproduce music beautifully. From its die-cast aluminum turntable platter to its linear tracking tone arm for error free tracking, the sound and action is superb.

It features automatic lead-in, automatic shut off, automatic repeat and automatic muting. It automatically selects speed and record size. You can manually search for a track from the turntable itself, or perform any of the above functions from the remote control.



It has a top quality moving magnet P-mount cartridge, hydraulic cueing to protect your records, and a servo controlled belt drive motor for superb stability.

You'll particularly enjoy recording from this automatic turntable because of its stability, wide frequency response and easy remote control operation.



INTEGRATED AMPLIFIER

It's the brains and brawn of the system. From its 100 RMS watts per channel output, to its 10hz to 40,000hz ± 1 db frequency response, to its 93db signal to noise ratio, it's strictly audiophile.

And what control you'll have. The Loudness contour button which you'll use for low level listening, boosts the signal at 100hz by 8db and at 10,000hz by 4db.

There are both high and low filters, and not only are there linear bass and treble controls, there's a presence control to really bring your sound alive.

There are totally separate input and output controls for all controlled inputs, so that you may listen to a record while you tape from FM. And, if you add another cassette deck, you'll be able to use the two way switchable tape dubbing.

On the back panel is an audiophile feature you will appreciate if you're into bi-amping or adding sound processing devices. There are both 'preamp out' and 'main amp in' RCA jacks, something that's usually found on esoteric gear.

There are buttons which will allow

you to connect two speaker systems (one is included of course), and here's a feature you'll really appreciate.

This integrated amp has volume memory. When you turn it on, it will resume the last volume level that you set. Plus, there's a mute button to allow you to have instant silence for phone calls and other obnoxious interruptions.

12" 3-WAY PERFECTION

These 3-way speaker systems have a wide smooth frequency response from 36hz to 20,000hz. The crossover points are at 1500hz and 6,000hz.

The 12" woofer really produces superb, clean tight bass which is augmented by an acoustically designed bass port. So,

the sound will be both rich and full.

The mid-range is reproduced by a 5" driver, that in conjunction with the presence control on the amplifier, produces pure yet dramatic lifelike sound.

A 3" super tweeter give you a vibrant clean high end. The speakers are rated for 100 watts and are a perfect match for

this top of the line system.

MARVELOUS REMOTE CONTROL

It does it all. Not just volume. Not just preset stations. Look at all it does.

On the tuner, you can select AM or FM, You can tune AM and FM stations with up or down step tuning. Or, you can select any of the 16 presets.

On the Amp, you can control the volume, mute and switch in the Loudness Contour button. You can select Tuner, Phono, Tape or 2 additional Aux inputs.

On the auto reverse tape deck, you'll change directions and control all the movement commands. You'll Stop, Start, Fast Forward, Rewind, Pause, Record and use Record Mute.

And, you'll have full use of both the Index Scan and Search functions described with the deck.

With the turntable you can Play, Cut, Cue/Pause or cause the turntable to enter its repeat mode. You can even move from track to track on the record.

And finally, you can turn the entire system on or off. This infrared remote centralizes all functions of the system

for really easy system control, near the system or across the room.

WRAP IT ALL UP

Individually or as a system, these components are top quality. When you put them in the beautiful simulated walnut-grain rack with tempered glass door and glass top, it will be an eye catching addition to any room.

The rack is 18½" wide, 39¾" tall and 16" deep. The matching 12" 3-way speakers are 15" wide, 26¼" high and 13" deep. The system is made by Magnavox, a trusted name for years. It's backed by their standard limited warranty.

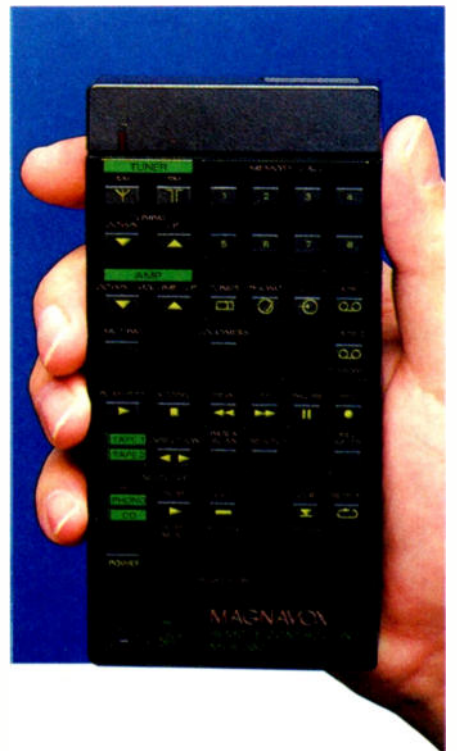
REMOTE SHOCK WAVE RISK FREE

Wait till you hear the sound. Wait till you get your hands on the solid, superbly crafted controls. And wait till you try the remote. It's a thrilling experience.

If you're not 100% satisfied, simply return the system in its original boxes to DAK within 30 days for a refund.

To order your Magnavox 100 watt per channel Stereo System with Linear Tracking Turntable, Auto Reverse Cassette Deck, Synthesized AM/FM Stereo Tuner, 12" 3-Way speaker systems and beautiful Rack risk free with your credit card, call toll free or send DAK's blockbuster price of just \$649 (\$55 P&H) Order No. 4270. CA res add sales tax. We must ship by truck to a street address only, no P.O. Boxes please.

The sound that this system will produce in your home will be thrilling. And, speaking of being thrilled, wait till you feel the controls and watch this system explode into action when you touch a button on its remote control.



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BY ROBERT ANGUS



STEVEN ROSENBAUM

8mm DELIGHT

**A WEEK-LONG FIELD TEST OF
SONY'S NEW CAMCORDER ERASES
MANY DOUBTS ABOUT THIS
EMERGING VIDEO FORMAT.**

OVER THE PAST YEAR OR SO, I'VE HAD THE OPPORTUNITY TO FIELD-TEST JVC's Videomovie (July 1984), Kodak's 8mm Kodavision (February), and Panasonic's Omnimovie (July). So when HIGH FIDELITY told me that it had one of the first production models of Sony's new Video 8 camcorder, the CCD-V8, my fingers itched to check it out. Using the Sony for a week in a variety of situations has erased any doubts I had harbored about 8mm: It is a worthy contender among camcorders of all formats.

First, the CCD-V8 is smaller and lighter than any other unit on the market, even the JVC Videomovie. Weighing just more than five pounds with battery and cassette, it measures $4\frac{5}{8}$ inches wide by $7\frac{5}{8}$ inches high by $13\frac{1}{2}$ inches deep. The tapes are only slightly larger than audio cassettes, yet they can record 90 minutes of material. The rechargeable Ni-Cad batteries are rated for one hour of recording time. The Sony is remarkably easy to use, once you get the hang of it, and results compare favorably with those of the other camcorders I've tested.

Robert Angus writes extensively on video equipment and technology.

In addition to features and functions common to other camcorders, the CCD-V8 includes automatic tape backspacing for smooth transition between scenes, even if you stop the recorder and start it again; RECORD REVIEW, which enables you to replay the last few seconds of tape before recording the next scene; BACKLIGHT, for use in taping a dark subject in front of a brightly lit background; and a simple procedure for adjusting white-balance perfectly every time.

Controls are arranged conveniently for quick and efficient operation: The camera power switch, which turns on both camera and recorder, is on the left side of the camera body along with the white-balance switch (symbols indicate the daylight/artificial-light/auto-adjust options), the recording review button, and a lens aperture switch (backlight/normal/highlight).

When you insert your right hand through the camera grip—like all other camcorders, this one's not designed for southpaws—your index and middle fingertips touch the wide-angle and telephoto lens adjustments, and your thumb rests on the recording start/stop trigger. These controls are stiff enough to require deliberate pressure to operate, whereas those on JVC's Videomovie, for example, respond to the slightest pressure, whether intentional or accidental. All tape transport controls (VCR power, cassette eject, play, fast forward and reverse, pause, and record) are at the rear of the unit. An LCD display window includes a tape counter and indicators for moisture, MEMORY, low battery power, and no tape or

tape runout.

You'll also find a back-panel earphone jack and five-pin remote control connector. A small palm-size adapter, which plugs into the bottom of the unit, enables you to record from external sources, such as a TV receiver, or to play back tapes through a TV set or monitor. Images on the small (postage-stamp-size) black-and-white viewfinder accurately reflect the dimensions and details of the scene you're shooting. Three indicator lamps above the tiny screen advise you of low-light conditions, tape-run/battery-low, and correct white balance. The viewfinder is adjustable both vertically and horizontally.

They say that when all else fails, read the instructions. I figured that after operating three superficially similar camcorders in recent months, I could forgo the pleasure of Sony's prose and get right to the shooting. Wrong. My first attempt, made without reference to the manual, produced a colorful midsummer recording marred by the heaviest snowfall I've ever seen on videotape. I dug out the manual, read it quickly, put it away, and tried again. Results were the same. Finally, I held the manual in one hand and the camcorder in the other and went through the procedure one step at a time. Practice makes perfect: The results the third time were breathtaking. I don't know exactly what the difference was between the various attempts, but I'd certainly recommend that any prospective buyer read the instructions with camcorder in hand before attempting any taping.

This may be easier said than done, since I found my-

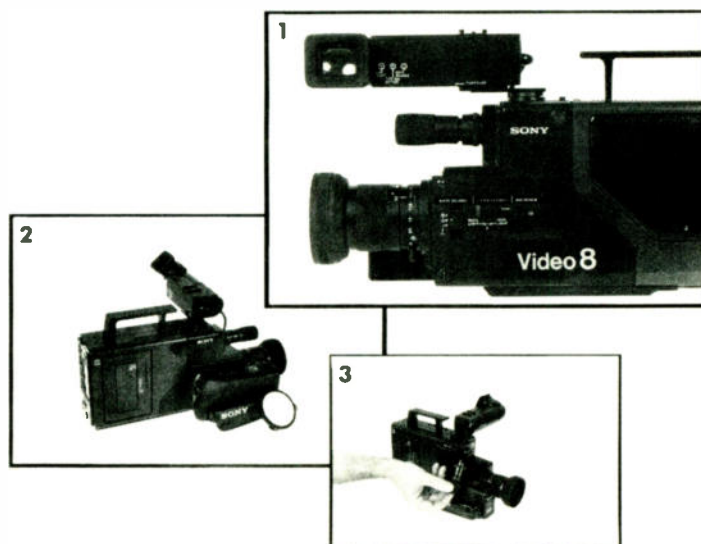
self rereading virtually every step. Either I'm unusually slow at grasping directions, or the manual is not clear in outlining them, because even in playing back my recordings through a color monitor, it took me three tries to achieve a picture and one more to get the sound right.

In summer sunlight, the recorder delivered warm, natural colors—an emerald expanse of lawn under a deep blue sky flecked with puffy white clouds, a canary-yellow building, a patch of tulips of varying colors. Colors seemed substantially more stable than they did with Kodak's 8mm system (an impression I double-checked by replaying on the Sony transport a tape I'd shot with the Kodak unit). Indoors, the unit coped with virtually any daytime light condition, but was less satisfactory under candlelight or subdued lighting than, say, the Panasonic or JVC. Though Sony specifies minimum required illumination as 19 lux, the low-light indicator blinked regularly when I was shoot-

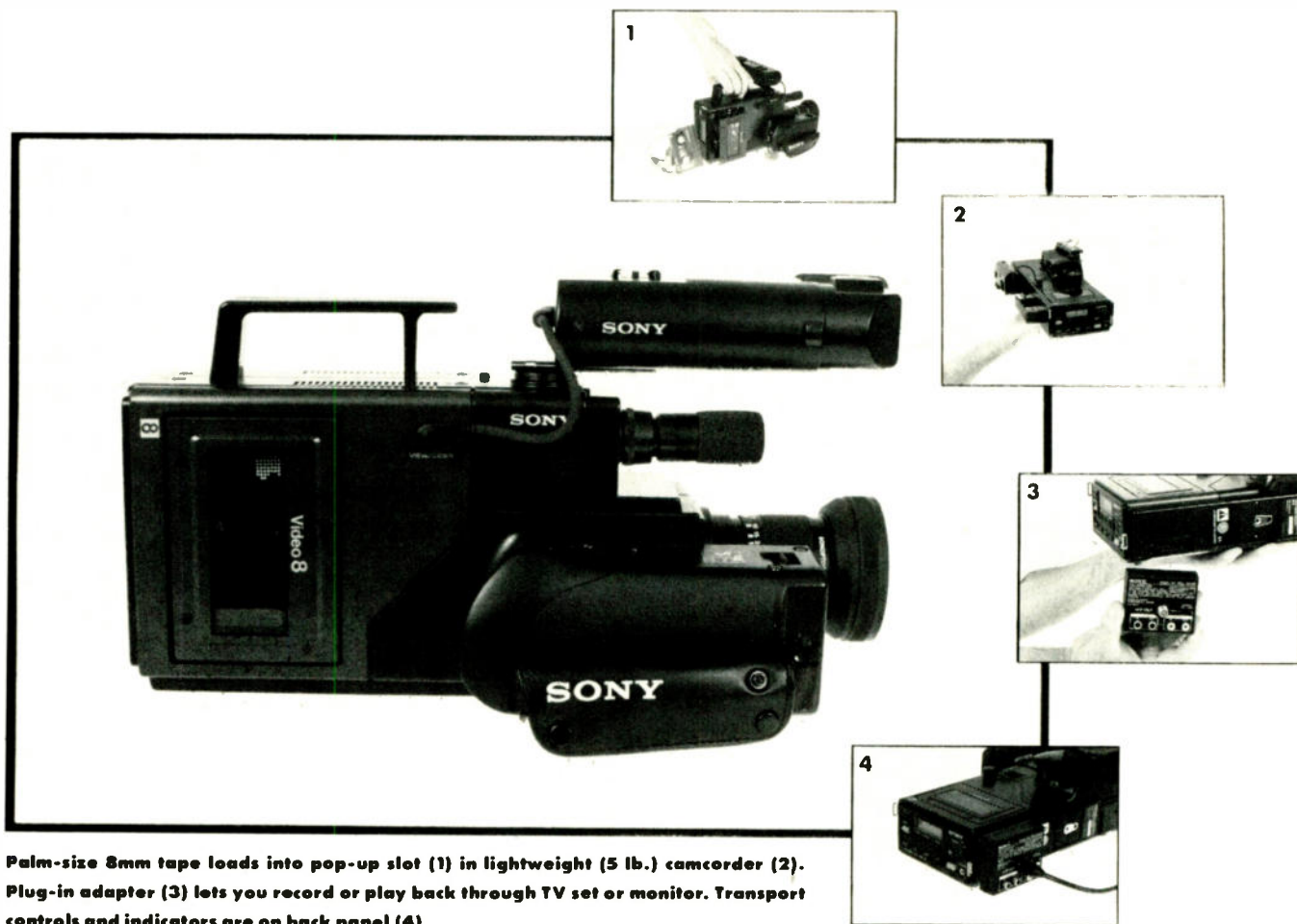
ing in dark corners and at a candlelight dinner. On the other hand, the CCD-V8 uses a CCD (charge-coupled device), instead of a conventional imaging tube. It is thus essentially immune to light lag.

Closeup recording of everything from flower petals to still photographs and very tiny objects is possible with the CCD-V8. In fact, if you can light the subject properly, you can record with the lens no more than a quarter-inch away from an object. But adjusting the macro lens was more difficult than on the JVC or Panasonic, and the results less satisfactory. Using the same photographs and cartoons as I did when evaluating the other two, I also found depth of field and clarity of the finished result to be less pleasing.

Sony claims that its unit works best with its own 8mm cassettes. Certainly, results with Sony tape (a metal-evaporated formulation) were impressive. However, since I had a TDK 90MP (metal particle) cassette handy, I shot some of the same scenes on it



The CCD-V8 has viewfinder indicator lights and controls for macro lens, iris, and white balance (1); translucent plastic lens cap for adjusting white balance (2); and a mike (3).



Palm-size 8mm tape loads into pop-up slot (1) in lightweight (5 lb.) camcorder (2). Plug-in adapter (3) lets you record or play back through TV set or monitor. Transport controls and indicators are on back panel (4).

and compared them with both those on the Sony tape and a portion of Kodak metal-evaporated tape I'd used to evaluate Kodavision. Shifting light conditions prevented true A/B comparisons, but differences were difficult to pick out on the basis of the images reproduced by my 25-inch monitor.

The lens cap for the CCD-V8 is fastened to the hand grip by means of a short cord. Made of white translucent plastic, it is intended for use in adjusting white balance, much as on Panasonic's Omnimovie—a highly commendable idea that other camcorder manufacturers should copy.

In theory, Sony's AFM audio system (the type used on Beta and VHS Hi-Fi VCRs) should produce sound quality superior to that on any half-inch camcorder, and, in fact, it does. When testing Kodavision, which also uses

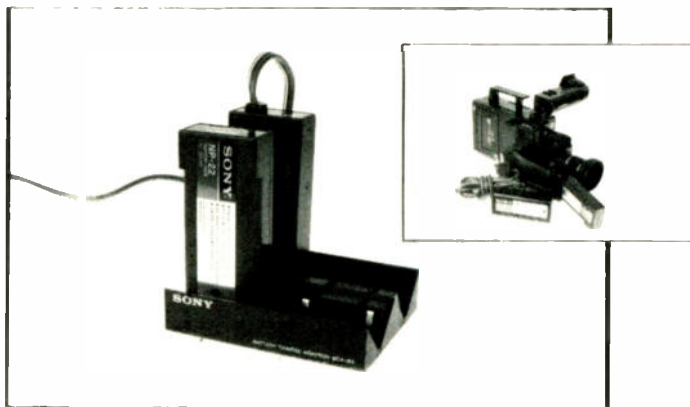
AFM, I was able to record some European street musicians—including an itinerant kilted bagpiper and a Dutch barrel-organist—and I can testify that the sound was of broadcast quality. This time I had to make do with ordinary speech and street noise. These sounds reproduced naturally, but made no real demands on the system. Though the 8mm format is theoretically capable of making stereo soundtracks, the CCD-V8 is a mono-only unit.

In conclusion, I find Sony's Video 8 system to be remarkably easy and convenient to use and a pleasure (thanks to its light weight and diminutive size) to carry. Results may not be quite on par with those of the half-inch formats when it comes to chroma noise. Though it wasn't possible to make a direct comparison, I thought I noticed more noise in reds and yellows produced on the

Sony than I had with Omnimovie or Videomovie. But the picture is highly acceptable, and miles ahead of that produced by Kodavision.

If you demand the ultimate in picture quality and are willing to sacrifice something in the way of portability and compactness to achieve it, you're probably better off sticking with one

of the half-inch units. However, what you give up in picture quality when you move to the smaller format probably isn't enough to deter anyone but a highly critical videophile: The CCD-V8 is more than adequate for making good family and vacation pictures and for most ordinary nonprofessional applications. ●



Battery, shown recharging in AC adapter/charger, slips inside camcorder's handle.

Our experts uncover some surprise top performers among the latest crop of blank cassette tapes.

PARADOX: ON ONE hand, we need to know exactly how tapes in general will behave if we're to predict how a deck will respond when you try recording on them; on the other hand, if all tapes are to respond in the same way, there can never be any improvement in them. For years, we have been editorializing on the need for tape standards and standardization if the buyer of a new deck is to know how to make it achieve its advertised specs and keep it performing at its best without periodic realignment as tapes change. But if you accept the claims of those who make tapes, change always is for the better. And that premise isn't without merit.

The catch is that the improvement is more likely to sound worse than better unless your deck is equipped to cope with it. This is because virtually all tape improvements involve increases in two factors that go hand in hand with lower distortion and noise (and, therefore, greater headroom, particularly at high frequencies, and dynamic range) plus more extended response at high frequencies. These two factors are coercivity and remanence—technical jargon for things that you'll never have to contend with directly, but that have practical consequences you *do* have to deal with.

Increased coercivity requires more bias current than would be best for a comparable tape of lower coercivity. Without it, response will tend

to peak at high frequencies, putting an unnatural edge on the sound. Similarly, the deck must compensate for the higher output level of a tape with increased remanence. Otherwise, Dolby "tracking" (the exactitude with which playback decoding undoes the encoding that took place when you recorded the tape) can suffer audibly, though it might require many typical incremental changes before you would notice anything amiss unless you were specifically listening for it.

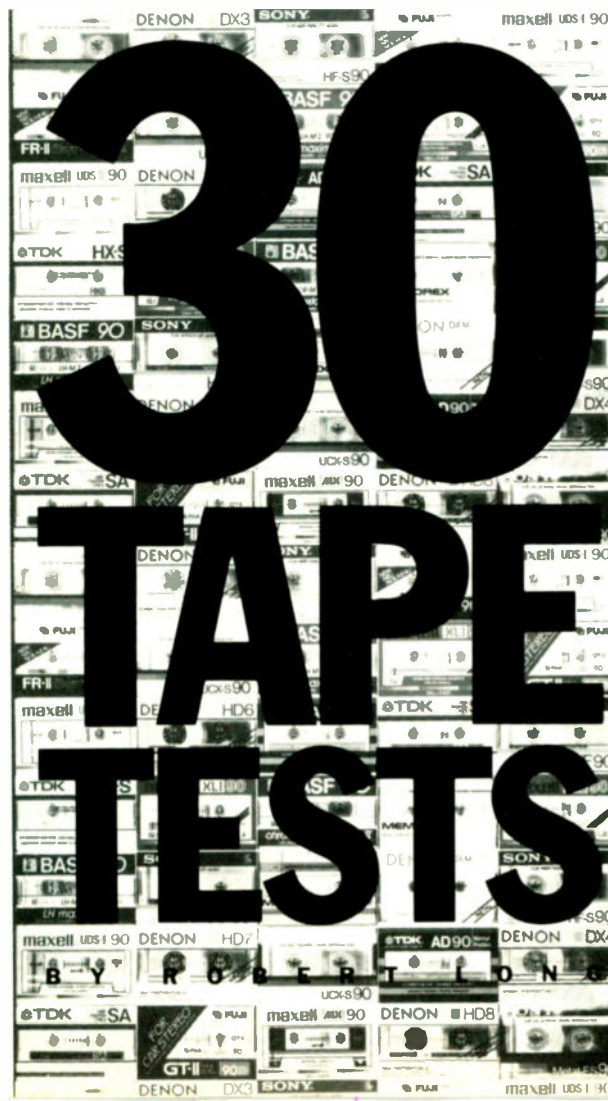
Over the last decade, the International Electrotechnical Commission (IEC), based in Europe, has addressed the problem head on by rewriting its standards entirely and devising four generic reference tapes for use in testing recording equipment and against which all other tapes are to be compared. The IEC Type I is a ferric (sometimes called "standard," "normal," or "LN," for low noise, though all these terms are excessively vague or even misleading) that assumes use of 120-microsecond

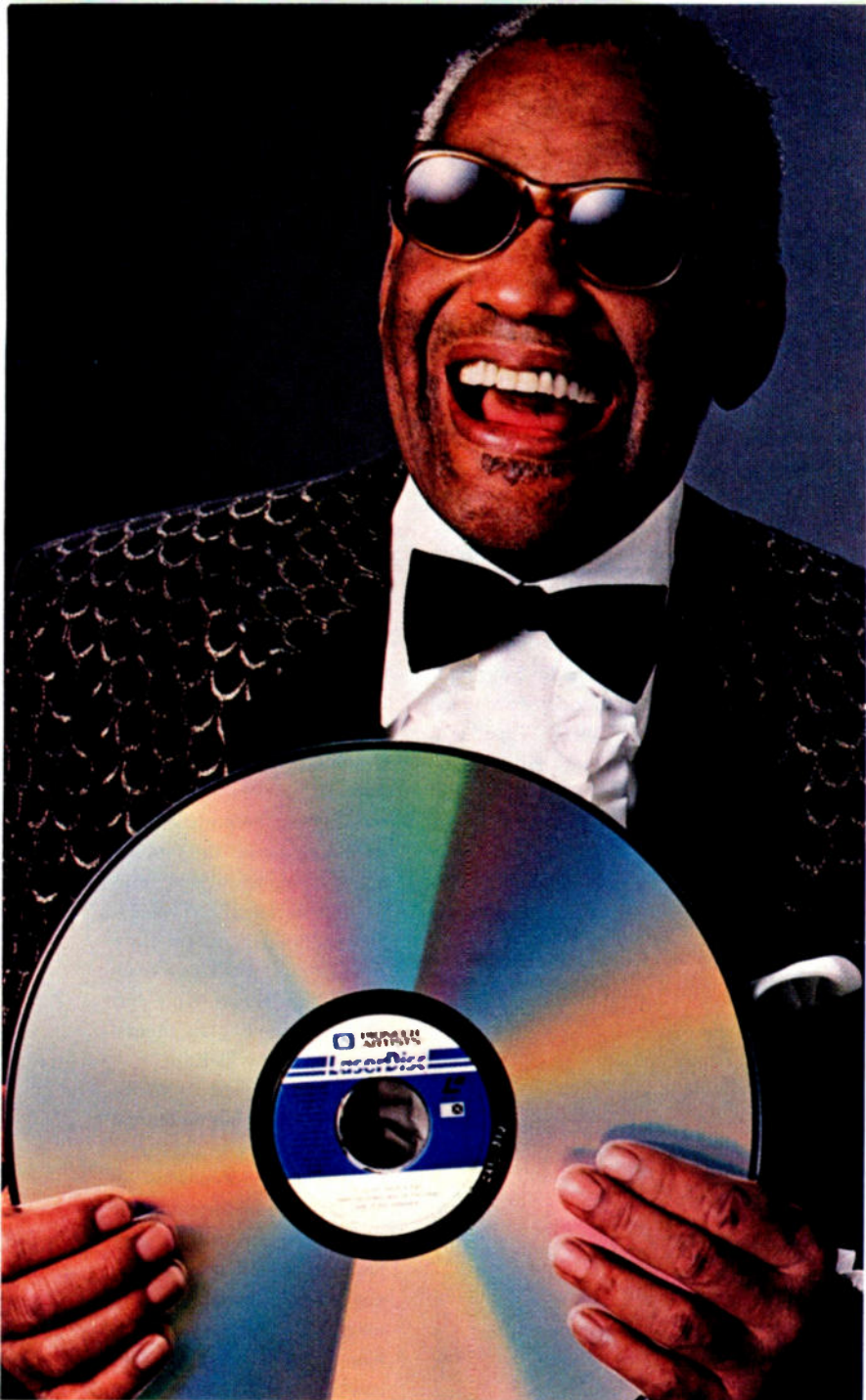
playback equalization and whose generic version actually is made by BASF. The company also manufactures the generic Type II—the reference for all chromium dioxide, ferricobalt, and comparable formulations intended for use with "high" bias (another potentially misleading term) and 70-microsecond EQ—though it is in fact a genuine chrome. Type III, ferrichrome, was on the way out before the standard ever got off the ground, and it's seldom provided for in current decks. IEC Type IV represents the metal-alloy tapes, for use with bias considerably higher than "high" but with the same EQ; the generic tape is made by TDK.

As the IEC standard took shape, it looked like a godsend in the anarchy of its time. Even before it won wide acceptance, we had adopted our own classifications, largely based on the IEC's. Ours deviated on only three points: We used arabic numbering (Roman numerals are a constant source of printing errors); we added a Type 0 for older and less expensive ferrics requiring significantly less bias than the IEC's generic Type I (the distinction that had led us to yearn for some sort of standard in the first place); and we based our approach on commercial tapes rather than on the generics, which were not yet available.

In our last round of cassette-tape tests, just two years ago, we adopted the IEC generics as the benchmarks for tape comparison in such char-

(Continued on page 25)





How to pick a video system with your eyes closed.

by Ray Charles

"I look at video systems a little differently than you.

I look with my ears.

And, frankly, since the beginning, video has sounded pretty sad.

Then along comes Pioneer with LaserDisc. And suddenly, my ears get very happy.

The sound of LaserDisc is as good as anything I ever heard on my stereo.

Maybe better.

And while I was impressed with the sound, the video experts were floored by the picture. They tell me nothing else even comes close.

Maybe you've already got a stereo, and maybe you've already got a VCR. You've still got to get LaserDisc. Because whatever you're watching — music or movies — LaserDisc does what no other system can do. For the first time, it brings the best picture and the best sound together."

The model shown here is the Pioneer® CLD-900. The world's first combination LaserVision and CD player.

LaserDisc™ brand videodisc player is a trademark of Pioneer Electronics Corp.
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PIONEER
Video for those
who really care about audio.



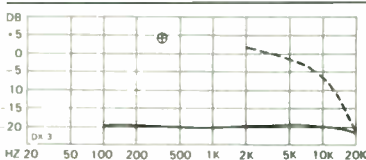
DENON

The company is in the process of revamping all its formulations. It also has revised its shell design to provide a generously proportioned "picture window." We chose to test all but the middle Type 2 formulation (HD-7) of the new ones now available. DX-3, Denon's middle Type 1, proves a good performer, although with a surprisingly high bias point. The top Type 1, DX-4, offers better headroom across the board and a more conventional bias point, but it concedes to DX-3 a minute advantage in the noise figure. Indeed, noise is the only respect in which it is not better than average. HD-6 proves to be an exceptional match to the Type 2 reference in bias point and sensitivity. However, it has slightly less dynamic range than average among its peers. HD-8, a metal-particle Type 2, exemplifies the excellent high-frequency headroom of its type, but offers somewhat less midrange dynamic range than average. Bias point is only a hair higher than the HD-6's; sensitivity is noticeably higher. The Type 4 entry, DXM, is scheduled for September replacement by an improved formulation, called HDM. The present one is lower in bias point and sensitivity than most of its competitors. Headroom is about par in the treble, but significantly below average in the midrange.



Denon DX-3 C-90 cassette tape (Type 1)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

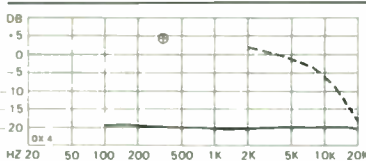


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 4 1/4 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	- 1/2 dB	
at 15 kHz	-14 dB	
RELATIVE BIAS	125%	
RELATIVE SENSITIVITY (333 Hz)	- 1/2 dB	
A-WEIGHTED NOISE (re 0 dB)	-54 1/4 dB	
MIDRANGE S/N RATIO (re 3% THD)	58 1/2 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	0.79%	0.15%
C-90 PRICE	\$3.75	



Denon DX-4 C-90 cassette tape (Type 1)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

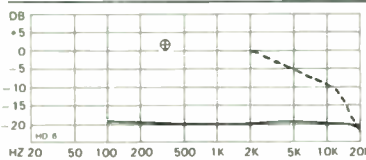


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 4 1/2 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	- 1/4 dB	
at 15 kHz	-12 1/4 dB	
RELATIVE BIAS	113%	
RELATIVE SENSITIVITY (333 Hz)	+ 3 1/4 dB	
A-WEIGHTED NOISE (re 0 dB)	54 dB	
MIDRANGE S/N RATIO (re 3% THD)	58 1/2 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	0.65%	0.11%
C-90 PRICE	\$4.50	



Denon HD-6 C-90 cassette tape (Type 2)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



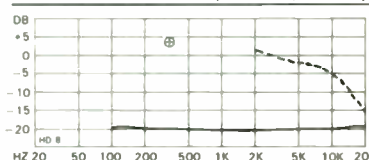
Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 3 3/4 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	0 dB	
at 15 kHz	-11 dB	
RELATIVE BIAS	92%	
RELATIVE SENSITIVITY (333 Hz)	- 1/2 dB	
A-WEIGHTED NOISE (re 0 dB)	-54 1/2 dB	
MIDRANGE S/N RATIO (re 3% THD)	58 1/4 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	1.17%	0.22%
C-90 PRICE	\$7.50	

Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 1 1/2 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	-4 dB	
at 15 kHz	-15 1/2 dB	
RELATIVE BIAS	101%	
RELATIVE SENSITIVITY (333 Hz)	+ 1/4 dB	
A-WEIGHTED NOISE (re 0 dB)	-58 1/4 dB	
MIDRANGE S/N RATIO (re 3% THD)	59 3/4 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	2.04%	0.26%
C-90 PRICE	\$4.00	



Denon HD-8 C-90 cassette tape (Type 2)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

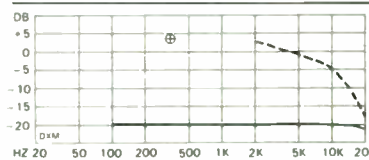


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 3 1/2 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	-1 1/2 dB	
at 15 kHz	-10 1/2 dB	
RELATIVE BIAS	102%	
RELATIVE SENSITIVITY (333 Hz)	+ 2 1/2 dB	
A-WEIGHTED NOISE (re 0 dB)	-54 3/4 dB	
MIDRANGE S/N RATIO (re 3% THD)	58 1/4 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	1.35%	0.20%
C-90 PRICE	\$6.00	



Denon DXM C-90 cassette tape (Type 4)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 3 3/4 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	0 dB	
at 15 kHz	-11 dB	
RELATIVE BIAS	92%	
RELATIVE SENSITIVITY (333 Hz)	- 1/2 dB	
A-WEIGHTED NOISE (re 0 dB)	-54 1/2 dB	
MIDRANGE S/N RATIO (re 3% THD)	58 1/4 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	1.17%	0.22%
C-90 PRICE	\$7.50	



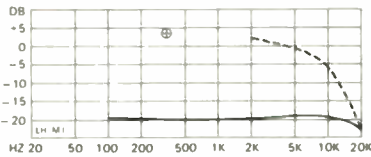
BASF

BASF's new shells have oversize windows and incorporate the company's SM (Special Mechanics) guide arms, which are designed to promote even tape wind on the hub and, therefore, smooth motion from the supply hub to the take-up side. Labeling space is larger than average, but no replacement labels are supplied. The two formulations tested here are from the Maxima series (thus the "M" in their respective designations). The Type 1 ferric measures much like its predecessor, Pro I Super, though with some gain in headroom for extreme highs at the expense of the midrange. The Type 2 tape—one of the few that shares the IEC reference tape's chromium dioxide magnetic particle—is noticeably higher in bias point and sensitivity than the reference, and it achieves greater midrange and lower-treble headroom than does the company's Chromoxid Extra II (formerly Pro II). The true chrome tapes remain the low-noise champions; this one misses the absolute record only by an insignificant margin.



BASF LH-MI C-90 cassette tape (Type 1)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

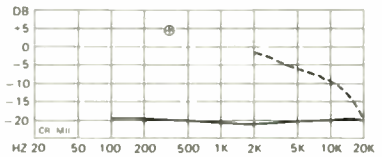


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 3 3/4 dB	
Maximum high-frequency output (3% IM):		
at 4 kHz	- 1/2 dB	
at 15 kHz	- 12 1/2 dB	
RELATIVE BIAS	114%	
RELATIVE SENSITIVITY (333 Hz)	+ 1.2 dB	
A-WEIGHTED NOISE (re 0 dB)	- 55 1/4 dB	
MIDRANGE S/N RATIO (re 3% THD)	59 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	0.44%	0.13%
C-90 PRICE	\$2.79	



BASF CR-MII C-90 cassette tape (Type 2)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 4 1/2 dB	
Maximum high-frequency output (3% IM):		
at 4 kHz	- 5 dB	
at 15 kHz	- 13 3/4 dB	
RELATIVE BIAS	111%	
RELATIVE SENSITIVITY (333 Hz)	+ 1 1/2 dB	
A-WEIGHTED NOISE (re 0 dB)	- 59 dB	
MIDRANGE S/N RATIO (re 3% THD)	63 1/2 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	1.05%	0.22%
C-90 PRICE	\$4.79	

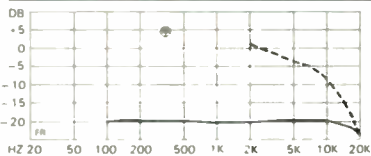
FUJI

This company is a leader in creating shells whose A and B sides can be distinguished by feel alone. Both of the newest tapes are Type 2. The FR-II shell has molded braille side indications. The tape inside has good midrange dynamic range. Bias point and sensitivity both are somewhat higher than those of the Type 2 reference tape. The GT-II formulation measures essentially the same as the FR-II, but is specially constructed to withstand the rigors of use in automobiles. Its ABS shell—whose asymmetrical design makes it relatively easy to tell A from B in the dark—is rated to 230 degrees, as are the tape base and binder. And the pressure pad is mounted on a shock-absorbing bifurcated spring.



Fuji FR-II C-90 cassette tape (Type 2)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

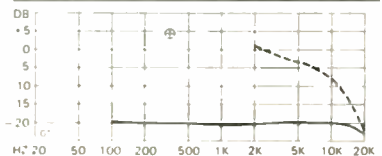


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 4.1 dB	
Maximum high-frequency output (3% IM):		
at 4 kHz	- 2.3 dB	
at 15 kHz	- 16 dB	
RELATIVE BIAS	109%	
RELATIVE SENSITIVITY (333 Hz)	+ 1.1 dB	
A-WEIGHTED NOISE (re 0 dB)	- 57.1 dB	
MIDRANGE S/N RATIO (re 3% THD)	61.1 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	7.82%	0.18%
C-90 PRICE	\$5.95	



Fuji GT-II C-90 cassette tape (Type 2)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 4 1/4 dB	
Maximum high-frequency output (3% IM):		
at 4 kHz	- 2.1 dB	
at 15 kHz	- 15 dB	
RELATIVE BIAS	109%	
RELATIVE SENSITIVITY (333 Hz)	+ 1.1 dB	
A-WEIGHTED NOISE (re 0 dB)	- 57.1 dB	
MIDRANGE S/N RATIO (re 3% THD)	61.1 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	0.81%	0.14%
C-90 PRICE	\$7.45	



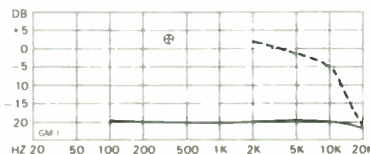
KONICA

Though the Konica name is well known in photography, its entry into tape (by way of videotape) is quite recent. We decided to test all cassette formulations except a budget ferric (ML), and we found them entirely consistent with high-quality tapes of other brands. GM-II belongs to the "standard" subgroup of Type 2—that is, it evidently is not made from a modified metal-alloy powder. Bias point is a little below that of the reference tape, sensitivity a little higher. Midrange dynamic range is good. The Type 4 tape is among those requiring extra bias. It delivers better midrange headroom than average among the present group and, partly as a result, dynamic range is excellent overall.



Konica GM-I C-90 cassette tape (Type 1)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

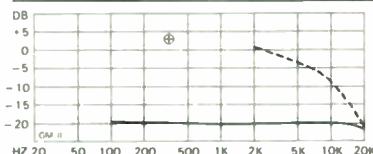


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+3 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	-1/2 dB	
at 15 kHz	-14 1/4 dB	
RELATIVE BIAS	110%	
RELATIVE SENSITIVITY (333 Hz)	-1/2 dB	
A-WEIGHTED NOISE (re 0 dB)	-55 1/2 dB	
MIDRANGE S/N RATIO (re 3% THD)	58 1/2 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	0.95%	0.12%
C-90 PRICE	\$3.19	



Konica GM-II C-90 cassette tape (Type 2)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

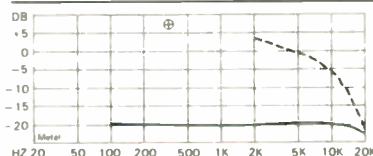


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+3 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	2 1/2 dB	
at 15 kHz	-15 1/4 dB	
RELATIVE BIAS	95%	
RELATIVE SENSITIVITY (333 Hz)	+1 1/2 dB	
A-WEIGHTED NOISE (re 0 dB)	-57 1/2 dB	
MIDRANGE S/N RATIO (re 3% THD)	60 1/2 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	1.18%	0.17%
C-90 PRICE	\$3.59	



Konica Metal C-90 cassette tape (Type 4)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+7 1/2 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	+1/2 dB	
at 15 kHz	-12 3/4 dB	
RELATIVE BIAS	124%	
RELATIVE SENSITIVITY (333 Hz)	-1/3 dB	
A-WEIGHTED NOISE (re 0 dB)	-56 1/2 dB	
MIDRANGE S/N RATIO (re 3% THD)	64 dB	
THD (at 333 Hz)	at 0 dB	at -10 dB
	0.50%	0.09%
C-90 PRICE	\$6.79	

(Continued from page 21)
 characteristics as sensitivity and bias requirements. (Because Diversified Science Laboratories has made all its tape measurements since 1980 on a Nakamichi 582 deck, we had previously compared all tapes with Nakamichi's own branded formulations; they, too, are subject to upgrading, however, thus providing a less-than-steady basis for comparison.) But the competitive forces at work within the tape industry have moved "real" tapes progressively farther from the IEC generics that represented

the status quo at the moment of standardization. As a result, some of those who were quick to adopt the IEC standard wholesale as a criterion of merit for judging tapes have already abandoned it. We have used its definitions only as a way of comparing tapes with each other, and we continue to do so.

The first step in our procedure is to adjust bias for equal sensitivity at 333 Hz and 10 kHz for the tape under test. This doesn't necessarily yield very flat frequency response with the recording equaliza-

tion built into the Nakamichi 582 (whose own tape-matching method is, in fact, significantly different). The resulting curve (recorded at 20 dB below the DIN 0-dB level of 250 nanowebers per meter) therefore must not be viewed as "response," but as "relative sensitivity." That is, it is useful only in comparing tapes. If at a given frequency the curve for one tape is 2 dB higher than that for another tape, response will usually be 2 dB higher on most decks. (There can be some disparities occasioned by differences in the

tape coating thicknesses and deck head construction.)

To use the relative sensitivity curves, you must determine what brands work well on your deck. Our equipment reports are designed to help you determine this. You should then look for similar behavior in other tapes tested here. Remember that the method used two years ago was identical, so comparisons between the two series of tests are valid. (You can also make legitimate comparisons with tape reports dating back to 1980 by applying the correc-



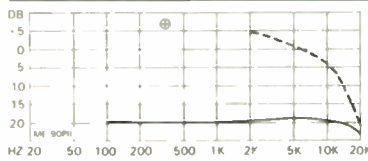
JVC

The ME-Pro tape, originally introduced as ME Professional, is now in its second generation—as ME-60P II (C-60 length) and ME-90P II (C-90). The shell remains unconventional, with a relatively large window that runs vertically; labeling space, on one end, is consequently restricted. Dynamic range is about average for the present Type 4 crop, as is the midrange headroom. In the lower treble, headroom is better than average. Both bias point and sensitivity are quite close to the reference-tape standard.



JVC ME-90P II C-90 cassette tape (Type 4)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



Relative output vs. frequency (at -20 dB)	
⊕ Midrange headroom (3% THD)	+7 dB
--- Maximum high-frequency output (3% THD):	
at 4 kHz	+1 3/4 dB
at 15 kHz	-11 3/4 dB

RELATIVE BIAS	104%	
RELATIVE SENSITIVITY (333 Hz)	+1/4 dB	
A-WEIGHTED NOISE (re 0 dB)	-54 3/4 dB	
MIDRANGE S/N RATIO (re 3% THD)	61 3/4 dB	
THD (at 333 Hz)	at 0 dB 0.54%	at -10 dB 0.10%
C-90 PRICE	\$16.95	

tion factors outlined in the introduction to our August 1983 tape tests.) And once you have compared the sensitivity curves in this way, you can compare other characteristics in the same manner.

The curves' significance depends on the degree of adjustability of your deck. If its bias, recording equalization, and recording sensitivity all are variable, you should be able to use any of the tapes documented here. If its recording equalization can't be "tuned," look for like shape in the sensitivity curves, particularly in the range below 10 kHz; if bias can't be tuned either, look for similarity above 10 kHz as well and for bias figures within 5 or 10 percent (preferably less, particularly among Type 1 and Type 2 tapes) of the figure for your known good brand. If there is no sensitivity adjustment and you expect to use Dolby noise reduction when recording, look for brands whose sensitivities measure within a few (preferably, 1) dB of that for your known brand.

Noise is tabulated in two ways. The deck's residual electronic noise is measured and

subtracted from that of the tape after it has been recorded with no input signal (so that bias noise will be included). The result is shown as so many dB below the 0-dB reference. This figure enables you to compare the absolute noise levels that will be produced by the various tapes. If you always record the same way, making no allowance for differences in headroom, this noise figure is the one that best expresses the hiss you will hear. If, however, you do record "hotter" on formulations that will accept the higher levels, you will want to base your judgments instead on the S/N (signal-to-noise) figure, which adds the tape's midrange headroom to its raw noise figure. The larger the S/N ratio, or the more negative the noise measurement, the better—though differences of a dB or less aren't worth fussing over.

DSL measures headroom in two ways. The midrange figure is simply the level to which a 333-Hz tone can be recorded without exceeding 3 percent third-harmonic distortion. This level is indicated on the graph by a "gunsight"

symbol at 333 Hz, and the figure is shown again in the data below the graph. In the treble, the lab uses twin-tone intermodulation (again with a 3-percent limit) as its criterion, measuring at six frequencies: 2, 4, 6.3, 10, 15, and 20 kHz. A dashed curve is drawn through these data points on the graph, and the figures for 4 and 15 kHz are given in the data below it. These represent the limits beyond which recording can't be considered clean.

The higher (or less negative) these figures are, the better, though where you most need the headroom will depend on the sort of music you record. In general, jazz, synthesizer rock, and anything containing bell-like sounds are the most demanding at high frequencies. String orchestras probably are the least demanding of all standard musical fare in this respect and will be limited by midrange headroom alone. For a check on distortion at lower levels (where the bulk of music will be recorded in practice), there are figures for THD (total harmonic distortion—actually, the sum of the second and

third harmonic products) at DIN 0 dB and at a level 10 dB lower—both at 333 Hz.

The distortion figures (and, therefore, those for headroom) also depend on the deck's setting. For example, if you have a deck with less high-frequency pre-emphasis in the recording EQ than the Nakamichi, it may require less bias to deliver flat response and consequently yield higher distortion figures and lower midrange headroom. Higher bias, however, would not only reverse this formula, but increase the tendency to self-erasure at high frequencies—reducing high-frequency headroom while improving the midrange. It is this interdependence between parameters that makes it impossible to improve tapes without risk of setbacks for some users.

In the past, some improvements were genuinely revolutionary: In particular, Du Pont's development of the chromium dioxide pigment and the appearance of metal-alloy tapes virtually simultaneously from all the major tape houses signaled radical innovation. But in recent

(Continued on page 29)



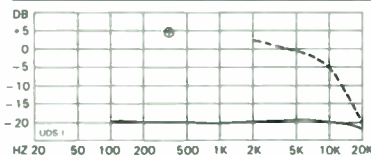
MAXELL

The company has redone its whole line since last year, and we here test the new formulations except UR (replacing LN as the budget Type 1) and the superpremium XL-IS and XL-IIS (which Maxell says are less significantly changed since our last test than the remainder). UD has been replaced by UDS-I, whose poreless Ferricrystal pigment yields excellent headroom and extremely low noise, for a dynamic range that easily rivals that of Type 2 tapes. XL-I, which fits between UDS-I and XL-IS in the pantheon, caps an excellent headroom curve with a superb midrange figure (bettered in our Type 1 tests only by XL-IS in 1983). But XL-I's higher noise gives a slight edge to both XL-IS and UDS-I in overall dynamic range. UDS-II fits comfortably into the mold of standard (nonmetal) Type 2 tapes, with good midrange dynamic range and somewhat high bias point and sensitivity by comparison with the reference tape. XL-II (which replaces UDXL-II) improves on UDS-II's dynamic range, despite a slightly higher noise figure, because its midrange headroom is significantly greater. Its bias point is lower than UDS-II's, its sensitivity higher. Headroom of the new MX is better than average among this year's Type 4 tapes, yielding good dynamic range. It is in the low-bias Type 4 group, with sensitivity reasonably close to that of the reference tape.



Maxell UDS-I C-90 cassette tape (Type 1)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

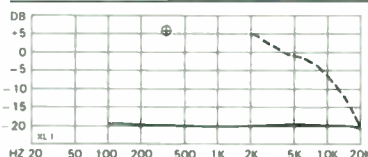


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+4 3/4 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	+ 1/4 dB	
at 15 kHz	-13 dB	
RELATIVE BIAS		
107%		
RELATIVE SENSITIVITY (333 Hz)		
- 1/2 dB		
A-WEIGHTED NOISE (re 0 dB)		
-55 1/2 dB		
MIDRANGE S/N RATIO (re 3% THD)		
60 1/4 dB		
THD (at 333 Hz)		
at 0 dB	at -10 dB	
0.51%	0.10%	
C-90 PRICE		
\$3.99		



Maxell XL-I C-90 cassette tape (Type 1)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

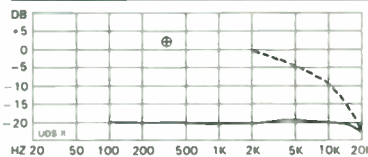


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+5 3/4 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	0 dB	
at 15 kHz	-13 dB	
RELATIVE BIAS		
110%		
RELATIVE SENSITIVITY (333 Hz)		
+ 1/2 dB		
A-WEIGHTED NOISE (re 0 dB)		
-53 dB		
MIDRANGE S/N RATIO (re 3% THD)		
58 3/4 dB		
THD (at 333 Hz)		
at 0 dB	at -10 dB	
0.36%	0.14%	
C-90 PRICE		
\$4.99		



Maxell UDS-II C-90 cassette tape (Type 2)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

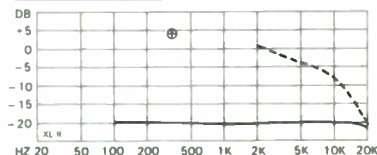


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 2 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	-3 1/2 dB	
at 15 kHz	-15 3/4 dB	
RELATIVE BIAS		
104%		
RELATIVE SENSITIVITY (333 Hz)		
+ 1 dB		
A-WEIGHTED NOISE (re 0 dB)		
-58 dB		
MIDRANGE S/N RATIO (re 3% THD)		
59 3/4 dB		
THD (at 333 Hz)		
at 0 dB	at -10 dB	
1.78%	0.34%	
C-90 PRICE		
\$3.99		



Maxell XL-II C-90 cassette tape (Type 2)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

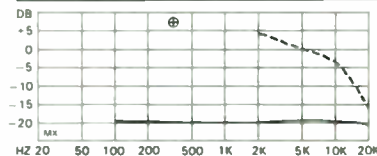


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 4 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	-2 3/4 dB	
at 15 kHz	-14 dB	
RELATIVE BIAS		
100%		
RELATIVE SENSITIVITY (333 Hz)		
+ 2 dB		
A-WEIGHTED NOISE (re 0 dB)		
-56 1/2 dB		
MIDRANGE S/N RATIO (re 3% THD)		
60 1/2 dB		
THD (at 333 Hz)		
at 0 dB	at -10 dB	
0.92%	0.18%	
C-90 PRICE		
\$4.99		



Maxell MX C-90 cassette tape (Type 4)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 7 1/2 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	+ 1 1/4 dB	
at 15 kHz	-9 1/2 dB	
RELATIVE BIAS		
97%		
RELATIVE SENSITIVITY (333 Hz)		
+ 3/4 dB		
A-WEIGHTED NOISE (re 0 dB)		
-55 dB		
MIDRANGE S/N RATIO (re 3% THD)		
62 1/2 dB		
THD (at 333 Hz)		
at 0 dB	at -10 dB	
0.48%	0.11%	
C-90 PRICE		
\$7.99		

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

We are all aware that, money aside, it is an easy matter to upscale our quality of life, but difficult to lower it. In this regard, ignorance is bliss, and strict asceticism is sometimes better than a taste of something finer that we can't have. So it is with the Concord HPL-550 Tuner/Amplifier/Tape Deck. One listen could ruin you.

Concord's performance engineering over the years has resulted in a list of mesmerizing characteristics that, as you become aware of them, will change your perceptions of car radios.

For instance:

A sound most critics claim is the best they've ever heard in a car radio.

Superb stereo imaging, wide band frequency response, and very low distortion levels are just some of the qualities of Concord's exclusive Matched Phase Amorphous Core Tape Head.

A cleaner sounding FM than you ever believed possible thanks to the exclusive Concord FNR FM noise reduction system.

The Tuner/Tape Switch

enables the listener to hear radio broadcasts when tape is in the rewind, fast forward or play mode.

Hi-Fi AM Stereo that receives Motorola C-QUAM broadcast signals.

Electronic DC Servo Tape Drive for extended life and accurate control of tape speed.

High powered inboard amplifiers—rated at 25 watts per channel.

Dolby B, C, + DBX: Tape noise reduction systems.

Lighted panel switches, electronic memory with 24 preset

stations, signal processor circuitry, a two-way/four-way amplifier, automatic Music Search Scanner, and a Bass EQ Switch.

One listen to all of this and you will be exhilarated. But then, if you can't afford it, you will be depressed. What will it be? Exhilaration and depression, the full human gamut? Or blissful ignorance? The trouble is, if you have read this far you are no longer blissfully ignorant.



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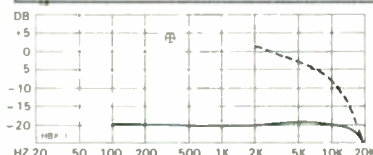
MEMOREX

The recent entries from Memorex (or, more exactly, Memtek, which makes it) are all from the Type 2 group. We tested the two top formulations. HBX-II is a "standard" Type 2, but with above-average headroom for that group in both the midrange and lower treble. Otherwise, it's a pretty close match to the average of all Type 2 tapes tested this time around. Bias point and sensitivity both are significantly higher than those of the Type 2 reference tape. CDX-II is designed to cope with the dynamic range of CDs (hence the name) and uses a metal-particle coating to this end. It offers significantly more high-frequency headroom than HBX-II, but its higher intrinsic noise level yields less midrange dynamic range despite the excellent midrange headroom. Bias point actually is a hair below that of the Type 2 reference; sensitivity is considerably greater.



**Memorex
HBX-II C-90
cassette tape
(Type 2)**

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



Relative output vs. frequency (at -20 dB)

⊕ Midrange headroom (3% THD)	+4 dB
----- Maximum high-frequency output (3% THD):	
at 4 kHz	-1 3/4 dB
at 15 kHz	-16 1/4 dB

RELATIVE BIAS 112%

RELATIVE SENSITIVITY (333 Hz) +1 1/2 dB

A-WEIGHTED NOISE (re 0 dB) -57 3/4 dB

MIDRANGE S/N RATIO (re 3% THD) 61 3/4 dB

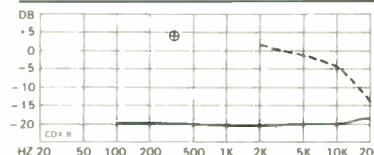
THD (at 333 Hz)	at 0 dB	at -10 dB
	1.09%	0.22%

C-90 PRICE \$4.79



**Memorex
CDX-II C-90
cassette tape
(Type 2)**

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



Relative output vs. frequency (at -20 dB)

⊕ Midrange headroom (3% THD)	+4 dB
----- Maximum high-frequency output (3% THD):	
at 4 kHz	-3 4 dB
at 15 kHz	-9 1/2 dB

RELATIVE BIAS 99%

RELATIVE SENSITIVITY (333 Hz) +3 dB

A-WEIGHTED NOISE (re 0 dB) -54 3/4 dB

MIDRANGE S/N RATIO (re 3% THD) 58 3/4 dB

THD (at 333 Hz)	at 0 dB	at -10 dB
	1.24%	0.17%

C-90 PRICE \$5.49

(Continued from page 26)
years, change has been essentially evolutionary. The use of cobalt to modify the magnetic properties of gamma ferric oxide first made it possible to produce "chrome" (Type 2) tapes without chrome; then the technology was folded back upon itself to improve the previously all-ferric Type 1 tapes. Even before Type 3 ferrichromes (in which a chromium dioxide surface layer is added to a ferric foundation), layered tapes that combined different magnetic pigments in successive coatings had eked out performance gains unavailable with either pigment alone.

At present, the emphasis is on managing the size, shape, and proportions of familiar particles to control their magnetic properties. That's how "Type 2" ferricobalt pigments have been adapted to make superior Type 1 tapes. The thrust continues in the

newest Type 2 tapes using modified metal-alloy ("Type 4") pigments. Several companies make tapes of this sort, usually touting them as the formulation of choice for copying digital recordings. As our data show, the reasonableness of this claim depends on the noise reduction system with which the copy will be made. The Type 2 metal tapes aren't particularly quiet, though they do have excellent high-frequency headroom and therefore should capture well the glittering transients that digital recording is so good at delivering.

Actually, the sleepers of the lot are the premium Type 1 tapes. They offer remarkable headroom—significantly better, on average, than that of regular Type 2 tapes throughout the frequency range and comparable to that of the metal Type 2 tapes in all but the extreme treble—together with low distortion. And their

dynamic range is excellent, despite the inherent disadvantage of the "hissier" playback equalization, as long as you're prepared to record at levels high enough to make full use of the available headroom. Some even cost less than their Type 2 counterparts. The Type 4 tapes do outstrip them, on average, in midrange headroom, but the difference is shockingly small in the treble, where metal is supposed to be the particle of choice. Only the Type 2 metal-based tapes actually demonstrate this advantage, significantly outperforming the Type 4 group in the extreme highs, with about 6-dB-greater average headroom at 20 kHz. This result is perhaps the biggest shocker of all.

A comparison of averages in the current tape group with those of our tests two years ago is instructive—and a little surprising. Among the Type 1 tapes, the average bias point

has crept from 106 percent of that required for the IEC reference tape to 111 percent, which is about what we would have expected. Given the emphasis some manufacturers put on output level, we figured that the sensitivity would have risen as well, but it still averages just below that of the reference tape. There is a slight improvement in headroom at around 2 kHz, but the remaining averages are almost identical.

For the Type 2 tapes, the average bias point has jumped from 96 to 103 percent of the reference, while sensitivity has nudged up only 1/4 dB, to +1 1/4 dB. Average distortion, headroom, and noise figures remain almost unaltered. If one looks only at the averages, the Type 4 group also appears to have changed little, except that sensitivity is up a whopping 3/4 dB. But averages may be misleading here. Two years ago, the metals fell into



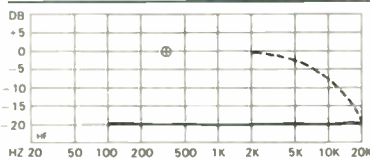
SONY

In recent years, the company has completely remodeled its cassette tapes. All have now been given shells with huge windows; the least expensive (HF) actually is housed in a totally transparent shell. All but HF have a new hub design and a raised "A" that distinguishes that side from Side B by touch. The stick-on labels are a little smaller than average. As a budget tape, HF is perhaps a little out of its depth in the present company. Its very low bias requirement and sensitivity, however, may make it well suited to some decks that can't cope with most current premium tapes. But its relatively restricted headroom and dynamic range suggest that Sony designed it as a utility tape rather than as a true performance product. HF-S is much more typical of the major Type 1 tapes and resembles Sony AHF, which it evidently is designed to replace. Dynamic range is in the championship class, though only a hair better than that of AHF—which, unlike HF-S, needed more bias than many nonadjustable decks supply. UCX-S is a "standard" Type 2 tape, with a bias requirement that closely matches that of the reference, but with slightly higher sensitivity. High-frequency headroom is somewhat improved relative to UCX (tested in 1983), but other characteristics don't measure quite as well. Bias almost exactly equals that of the Type 2 reference; sensitivity is significantly higher. Metal-ES is a real winner among the Type 4 tapes. Its bias point and sensitivity are higher than those of the reference, but not by much. Midrange headroom is superb—the best of any tape assessed this time around—and overall dynamic range is the best we've ever measured, at 66 1/4 dB. Treble headroom is a hair above average for this year's Type 4s at the extreme top, a hair below in the lower treble.



Sony HF C-90 cassette tape (Type 1)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

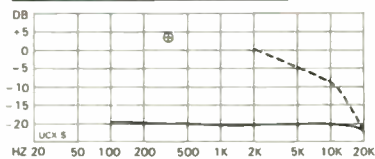


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	0 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	-1 1/2 dB	
at 15 kHz	-12 3/4 dB	
RELATIVE BIAS		
RELATIVE SENSITIVITY (333 Hz)	-1 1/2 dB	
A-WEIGHTED NOISE (re 0 dB)	-52 3/4 dB	
MIDRANGE S/N RATIO (re 3% THD)	52 3/4 dB	
THD (at 333 Hz)		
at 0 dB	at -10 dB	
	2.87%	0.20%
C-90 PRICE	\$3.15	



Sony UCX-S C-90 cassette tape (Type 2)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

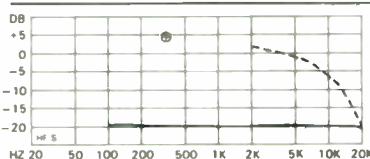


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+3 1/2 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	-3 1/2 dB	
at 15 kHz	-15 1/2 dB	
RELATIVE BIAS		
RELATIVE SENSITIVITY (333 Hz)	+2 dB	
A-WEIGHTED NOISE (re 0 dB)	-57 1/4 dB	
MIDRANGE S/N RATIO (re 3% THD)	60 3/4 dB	
THD (at 333 Hz)		
at 0 dB	at -10 dB	
	1.10%	0.22%
C-90 PRICE	\$7.00	



Sony HF-S C-90 cassette tape (Type 1)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

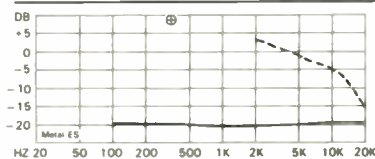


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+4 1/2 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	0 dB	
at 15 kHz	-12 1/4 dB	
RELATIVE BIAS		
RELATIVE SENSITIVITY (333 Hz)	0 dB	
A-WEIGHTED NOISE (re 0 dB)	-56 1/4 dB	
MIDRANGE S/N RATIO (re 3% THD)	60 3/4 dB	
THD (at 333 Hz)		
at 0 dB	at -10 dB	
	0.48%	0.13%
C-90 PRICE	\$4.25	



Sony Metal-ES C-90 cassette tape (Type 4)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+8 3/4 dB	
----- Maximum high-frequency output (3% IM):		
at 4 kHz	0 dB	
at 15 kHz	-7 1/2 dB	
RELATIVE BIAS		
RELATIVE SENSITIVITY (333 Hz)	+1 1/2 dB	
A-WEIGHTED NOISE (re 0 dB)	-57 1/2 dB	
MIDRANGE S/N RATIO (re 3% THD)	66 1/4 dB	
THD (at 333 Hz)		
at 0 dB	at -10 dB	
	0.26%	0.07%
C-90 PRICE	\$11.50	

two distinct groups, characterized by bias points of about 95 and 125 percent, respectively, relative to the Type 4 reference. This time, the lines aren't so clearly drawn, though the metals still cover a wider spectrum than either

the Type 2 or the premium Type 1 tapes. And none of the present Type 4 tapes really fits the average.

One conclusion is unavoidable, however: The evolution documented by our data isn't nearly as radical as those who

created it would have us believe. And this is in spite of the tape industry's tendency to move as a unit—a tendency resulting from the fact that some important developments occur at the few companies producing the raw magnetic

powder, rather than at the many actually manufacturing tape from it (to say nothing of the legion that market tape made by others). That's why several tape companies often announce almost simultaneously what proves to be the



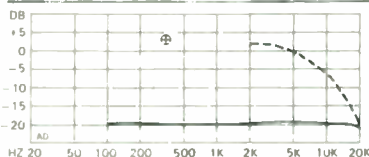
TDK

The labeling space on TDK cassettes is more extensive than average, but the company's approach to shell design and packaging is as close to a standard as it's possible to come. This generation of AD proves to be quite similar to that we tested in 1982, which is to say that it's an excellent Type 1 tape. Likewise, the current SA closely resembles the previous (1983) SA—and is therefore typical of "standard" Type 2 tapes—but has increased headroom at very high frequencies and a slightly lower noise floor. Bias point is only a trifle higher than that of the reference tape, and sensitivity is significantly higher. HX-S was the first of the metal-particle Type 2 formulations and is a particularly fine representative of its sort. Midrange dynamic range still isn't quite the equal of SA's, however. Bias point is somewhat higher than that of the reference; sensitivity is considerably greater.



TDK AD C-90 cassette tape (Type 1)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)

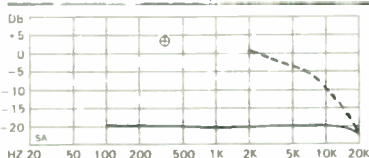


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 3 dB	
Maximum high-frequency output (3% IM):		
at 4 kHz	+ 1 dB	
at 15 kHz	- 13 dB	
RELATIVE BIAS		
	110%	
RELATIVE SENSITIVITY (333 Hz)		
	- 3/4 dB	
A-WEIGHTED NOISE (re 0 dB)		
	- 55 3/4 dB	
MIDRANGE S/N RATIO (re 3% THD)		
	58 3/4 dB	
THD (at 333 Hz)		
	at 0 dB	at -10 dB
	0.83%	0.09%
C-90 PRICE		
	\$3.30	



TDK SA C-90 cassette tape (Type 2)

PLAYBACK CHARACTERISTICS (re 750 nWb/m, 333 Hz)

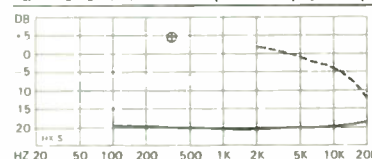


Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 3 1/4 dB	
Maximum high-frequency output (3% IM):		
at 4 kHz	- 2 3/4 dB	
at 15 kHz	- 16 dB	
RELATIVE BIAS		
	101%	
RELATIVE SENSITIVITY (333 Hz)		
	+ 1 1/2 dB	
A-WEIGHTED NOISE (re 0 dB)		
	- 57 1/4 dB	
MIDRANGE S/N RATIO (re 3% THD)		
	60 1/2 dB	
THD (at 333 Hz)		
	at 0 dB	at -10 dB
	1.13%	0.21%
C-90 PRICE		
	\$3.70	



TDK HX-S C-90 cassette tape (Type 2)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



Relative output vs. frequency (at -20 dB)		
⊕ Midrange headroom (3% THD)	+ 4 3/4 dB	
Maximum high-frequency output (3% IM):		
at 4 kHz	- 1/4 dB	
at 15 kHz	- 8 dB	
RELATIVE BIAS		
	107%	
RELATIVE SENSITIVITY (333 Hz)		
	+ 3 dB	
A-WEIGHTED NOISE (re 0 dB)		
	- 54 3/4 dB	
MIDRANGE S/N RATIO (re 3% THD)		
	59 1/2 dB	
THD (at 333 Hz)		
	at 0 dB	at -10 dB
	1.06%	0.17%
C-90 PRICE		
	\$7.00	

same development. But change is appreciable, if not dramatic. It may not be extreme enough to significantly enhance or compromise the performance of a deck whose recording abilities were only fair with previous tapes, but it is enough to downgrade performance from superb to only good on a deck that can't compensate for the deviation.

Keep in mind that we're measuring only major brands here. (And not even all of them—Scotch, having introduced its new line too late for this series of tests, isn't represented here.) Each tape is

made by a company that has devoted major resources to both research and production, though the producing company isn't necessarily the one whose name appears on the packaged cassette. When DSL has looked at off-brand tapes, the results have regularly been out of this league altogether. That is, the differences between the major brands and the off brands usually are dramatic by comparison with the differences of a dB here or a percentage point there that you will find in the data that follow.

A moral of this is that you

shouldn't place too much emphasis on the differences you find in the data, which in many cases border on insignificance. Some small differences might even be erased or reversed if the lab were to repeat the tests with different samples: The numbers simply aren't absolutes. But you shouldn't assume that brand makes no difference just because these are so similar. Buy several and compare them yourself by ear. On careful listening, with almost any deck, you'll probably hear differences.

Two of DSL's tests don't appear as data. In one, the ver-

tical scale of a playback sweep is expanded to dramatize any amplitude irregularities or instability. For the most part, the results were superb, with the least impressive (for Sony HF, the most inexpensive tape in the company's current line) still far smoother than the Grand Teton raggedness that has emerged in this test with off-brand tapes. In the other, DSL corrects the deck's azimuth for any tape skew that occurs. In a perfect cassette—with a well-designed, precision-molded shell—there should be no skew. The degree of correction involved there-



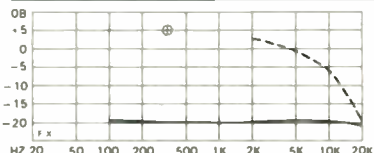
TRIAD

This brand is new to the U.S., though it has been available for some time (as "That's" tape) elsewhere. It's made by Taiyo Yuden Co. of Japan, a longtime supplier of ferrite products for electronics (the route by which TDK also entered tape manufacture), and is sold here by Harman America. The shells have a triangular window whose apex is near one hub, making the useful area smaller than average in some decks. The hub in question is for take-up on Side A and supply on Side B, making it possible (but only just) to distinguish sides by feel alone. Labeling space on the box insert card is at least as generous as most; that on the shell labels is very restricted. If you substitute file-folder labels (a common practice among serious recordists), they cover the type designation. FX has excellent headroom and is spot-on reference sensitivity, making it an exceptionally attractive Type 1 tape. The bias point is unusually high, however, which could pose problems in nonadjustable decks. EM-X is a metal-particle Type 2 formulation, and quite representative of that group. Bias actually is a little below that of the Type 2 reference, and sensitivity is significantly higher. MG-X proves to be fairly typical of Type 4 tapes, particularly those that require considerably more bias than the reference tape.



Triad F-X C-90 cassette tape (Type 1)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



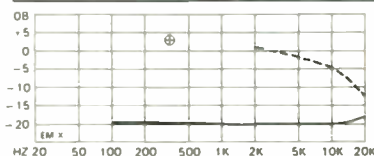
Relative output vs. frequency (at -20 dB)

⊕ Midrange headroom (3% THD)	+ 5 dB
----- Maximum high-frequency output (3% IM):	
at 4 kHz	+ 1/2 dB
at 15 kHz	-13 dB
RELATIVE BIAS	126%
RELATIVE SENSITIVITY (333 Hz)	0 dB
A-WEIGHTED NOISE (re 0 dB)	-54 1/2 dB
MIDRANGE S/N RATIO (re 3% THD)	59 1/2 dB
THD (at 333 Hz)	at 0 dB at -10 dB
	0.31% 0.11%
C-90 PRICE	\$3.39



Triad EM-X C-90 cassette tape (Type 2)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



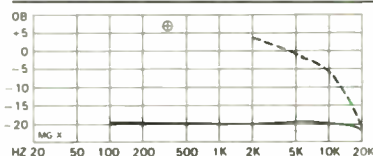
Relative output vs. frequency (at -20 dB)

⊕ Midrange headroom (3% THD)	+ 3 dB
----- Maximum high-frequency output (3% IM):	
at 4 kHz	-1 dB
at 15 kHz	-8 1/2 dB
RELATIVE BIAS	97%
RELATIVE SENSITIVITY (333 Hz)	+ 2 3/4 dB
A-WEIGHTED NOISE (re 0 dB)	-55 3/4 dB
MIDRANGE S/N RATIO (re 3% THD)	58 3/4 dB
THD (at 333 Hz)	at 0 dB at -10 dB
	1.60% 0.21%
C-90 PRICE	\$3.99



Triad MG-X C-90 cassette tape (Type 4)

PLAYBACK CHARACTERISTICS (re 250 nWb/m, 333 Hz)



Relative output vs. frequency (at -20 dB)

⊕ Midrange headroom (3% THD)	+ 7 dB
----- Maximum high-frequency output (3% IM):	
at 4 kHz	+ 1/4 dB
at 15 kHz	-12 3/4 dB
RELATIVE BIAS	119%
RELATIVE SENSITIVITY (333 Hz)	- 1/4 dB
A-WEIGHTED NOISE (re 0 dB)	-55 3/4 dB
MIDRANGE S/N RATIO (re 3% THD)	62 3/4 dB
THD (at 333 Hz)	at 0 dB at -10 dB
	0.54% 0.11%
C-90 PRICE	\$4.59

fore is an index of shell quality. None of the tapes in this batch needed more than minor azimuth adjustment. Though some needed more than others, it seemed to vary more from sample to sample than from brand to brand. We doubt that this excellence would have been sustained had we included off brands.

The cassettes we tested are, physically as well as magnetically, more notable for their similarities than for their differences. All shells guide the tape with idler wheels (not just guide posts, whose higher friction can cause problems) at

the front corners, and all have windows that are larger than the one in the original Philips shell. The standard size now is about 1/2 by 1 inch, though some brands have much bigger windows, as documented in the individual reports. And all have five-screw shell closures, enabling you to make repairs and reassemble the shell afterward, if you're handy, which you can't do with welded shells. All except BASF's have pressure-sensitive shell labels that can be typed on and then applied, for a neat finished appearance. And all have insert cards that

are very generous (though least so for Sony's budget HF formulation) in box-labeling space.

A unique feature of the Triad shell is a set of printed specs for bias, sensitivity, headroom, and high-frequency response. Although we don't know how these numbers were arrived at (they're mostly in the ball park with our test results, but some are over toward left field), they suggest a way of telling buyers just how best use can be made of these tapes. I'm enough of an optimist to hope that this approach might be

standardized and applied responsibly by all major manufacturers. If you choose to consider the idea utopian, I won't argue.

Finally, compare with caution the list prices we show. No other high fidelity product is subject to such a wide price spread from region to region, from store to store, and even from time to time. List prices are most helpful in gauging relative costs within a given brand, but they can be misleading for comparisons between brands if one is heavily discounted in your area and the other is not. ●

TEST REPORTS



TEAC R-999X CASSETTE DECK

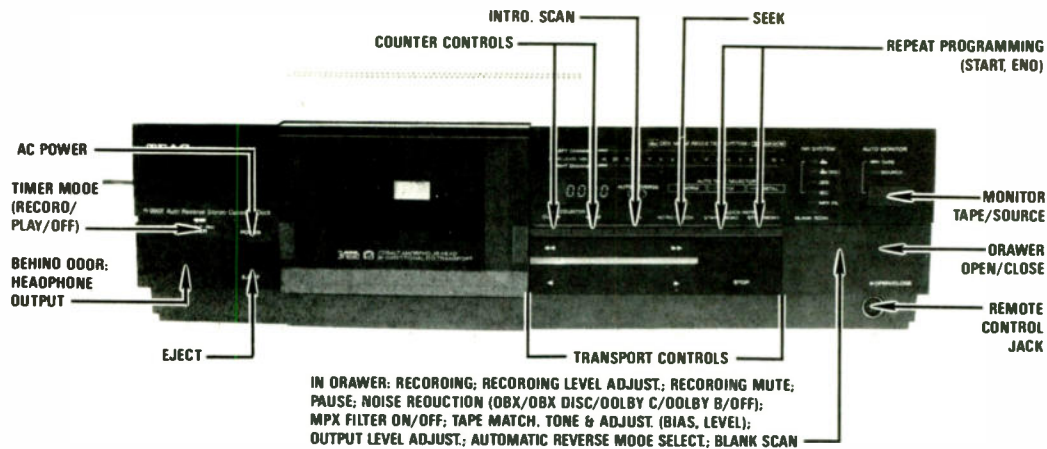
Dimensions: 17 by 4¾ inches (front), 13¾ inches deep plus clearance for controls and connections. Price: \$899; optional RC-205 wired remote control, \$50. Warranty: "limited," one year parts and labor. Manufacturer: Teac Corp., Japan; U.S. distributor: Teac Corporation of America, 7733 Telegraph Rd., Montebello, Calif. 90640.

Undoubtedly the most critical problem in designing a reversing cassette deck is maintaining consistent head alignment in both directions of tape travel. Without this, azimuth errors will cause recordings made in one direction to sound dull when played back in the other. As the popularity of bidirectional decks has climbed, manufacturers have devoted increasing attention to preventing such anomalies. What makes Teac stand out is the degree of success it has achieved, particularly in light of its use of a rotating head assembly, which is perhaps the most difficult method to tame.

The usual alternative is a stationary head having a double set of gaps—one

for each direction. It is much easier to assure that such a head does not change its orientation to the tape path. Unfortunately, increasing the number of gaps also complicates fabrication, making the construction of bidirectional heads capable of monitoring off the tape during recording a formidable undertaking. Rather than risk the compromises in basic head quality that might result from this approach, Teac has developed what it calls its Super Acculign rotating head system, which pivots a single set of gaps into the correct position for the selected direction. With its experience in developing professional equipment (its Tascam line) and computer tape transports and disk drives (which we use in a number of

Report preparation supervised by Michael Riggs, Robert Long, and Edward J. Foster. Laboratory data (unless otherwise indicated) is supplied by Diversified Science Laboratories.



our PCs), Teac is particularly strong in the precision engineering required to make the technique work up to the standards of high-quality unidirectional decks. Carefully machined low-friction bearings and an extremely hard ceramic stop (for halting the head's rotation at just the right position) are said to be the keys.

The design of the rest of the tape path also is very important, since the best head alignment in the world won't help if the tape skews differently whenever the deck changes directions. Teac has therefore developed an exactly symmetrical transport, in which the mechanism for moving the tape in one direction is a mirror image of the one that moves it in the other. And unlike reversing decks that sense the end of the tape mechanically and therefore wind all the way through the leader before turning around, the R-999X uses an infrared sensor that detects the end of the magnetically coated tape, for virtually instantaneous switches. This minimizes any interruption of the music at the end of a side. The transport uses four servo-controlled DC direct-drive motors (two for the reels and two for the capstans) to assure very low flutter.

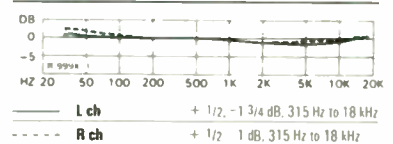
Despite a generous complement of convenience features, the R-999X presents a spare, uncluttered face. One reason is that there are no buttons for tape-type selection, which is handled automatically based on the standard keyways molded into the backs of almost all

modern cassette shells. Another is that all of the recording-related controls, such as those for input level setting and for bias and sensitivity (Dolby calibration) adjustment, are tucked away in a drawer that glides out when you press a panel at the lower right-hand corner of the faceplate. (A second push sends it back.) It also holds the transport mode switch (one-way, out-and-back, or continuous play) and switches for the three noise reduction systems: Dolby B, Dolby C, and DBX, all capable of providing off-tape monitoring during recording. There also are buttons for playback of DBX discs, for defeating all the noise reduction systems, and for switching the multiplex filter in (for recording off FM) and out.

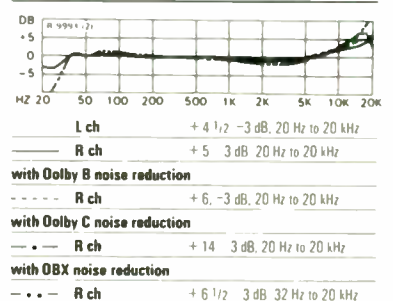
To the left of these are two bars. The top one is the recording button; you choose the transport direction by pressing the appropriate end. Recording then starts immediately: There is no recording interlock. However, since the bar is in the drawer, rather than on the front panel, it is very unlikely that you would ever hit it by mistake instead of, for example, PLAY. Below it is another bar for PAUSE (right end) and RECORDING MUTE (left end). Pressing the latter lays down a four-second blank and then puts the deck into RECORDING PAUSE. If you push it a second time before the four seconds have elapsed, the R-999X will go directly into the recording mode. Or you can make a longer blank by holding the bar down.

The RECORDING MUTE is intended pri-

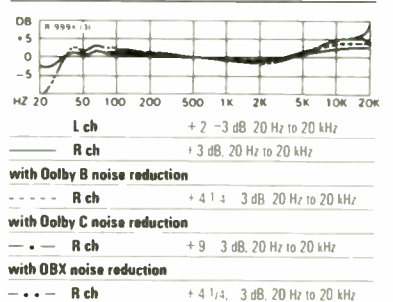
PLAYBACK RESPONSE (BASF test tape; -20 dB OIN)



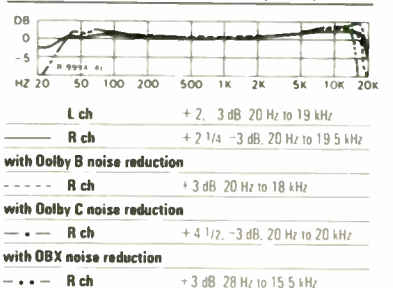
RECORD/PLAY RESPONSE, TYPE 2 TAPE (-20 dB)



RECORD/PLAY RESPONSE, TYPE 1 TAPE (-20 dB)



RECORD/PLAY RESPONSE, TYPE 1 TAPE (-20 dB)



marily as an adjunct to Teac's CPS (Com-pumatic Program Search) and CDS (Compumatic Direct Selection) functions, which are operated with the CPS button and fast-wind bar on the front panel. The former enables you to skip forward or backward as many as 15 selections, with the number, preceded by "CP," displayed on the tape counter (depending on how many times you press CPS). The deck counts the blanks and automatically goes into playback when it reaches the desired point. CDS is subtly different in that it finds a selection that is a specified number of blanks from the beginning of a specified side. The number appears on the counter, preceded by "PL." Ordinarily, the counter reads turns—or, if you prefer, elapsed recording time or playback time. The latter mode is strictly a timer and therefore does not keep up with the tape during fast winds.

Another function relying on spaces between selections is what Teac calls Intro Check. When activated, it plays ten seconds of each selection on the tape until you press one of the transport controls or the deck reaches the end of the tape three times (in the repeat mode). While it is on, the counter puts up the CPS display. And there is "Blank Skip," which listens for silences of more than ten seconds, fast-winding to the next selection when it finds one. Finally, we come to "Block Repeat," which enables you to mark any continuous segment of a tape for repeat playback. All of these features work well, making it very easy to find your way around a cassette.

Monitoring is switched automatically to tape except when the transport is in RECORDING PAUSE, STOP, or one of the fast-wind modes, but you can manually override the deck's decisions. A pair of LEDs above the switch tell whether you are monitoring source or tape. Similar indicators show which tape type and noise reduction system are in use. The peak-reading recording level meters are segmented bar graphs calibrated in 1-dB increments from -3 to +3 dB and 2-dB increments for two steps above and below (to +7 and -7). Their total calibrated range is from -20 to +10.

We were particularly eager to judge the effectiveness of Teac's Super Accu-

align system, whose story is told by the playback response. The head azimuth was a good match to that of Diversified Science Laboratories' standard BASF test tape, yielding unusually smooth and extended curves. Moreover, the two channels are very close over the entire range in the forward direction (shown). Even more remarkable, however, is the excellent match between the curves in forward and reverse playback (not shown): within 1/4 dB across the band on the left channel and within 1/2 dB up to 10 kHz on the right. (The right-channel gap aligns somewhat better to the tape in reverse, resulting in a 2 1/2-dB rise at 20 kHz.) The results in our listening tests were similarly impressive: We did not notice any difference in sound quality between forward and reverse. This is superb performance and bears out Teac's claims for its rotary head mechanism.

For the remainder of its tests, the lab used tapes recommended by Teac: TDK HX-S (a metal formulation) as the Type 2 ("chrome"), TDK MA as the Type 4 metal, and Maxell UDXL-I as the Type 1 ferric. And per our usual practice, it followed Teac's instructions for trimming up the bias and sensitivity for each tape before proceeding. We were therefore surprised to see the response rising from about 5 kHz up with all three tapes, the Type 2 especially. (The HX-S also exhibits relatively undistinguished midrange headroom—further evidence of under-biasing.) Because there is less musical energy in the top two octaves than in the eight below, this is not as apparent in auditioning as it is on the test bench, but we did find that we were able to improve matters somewhat by adjusting the bias by ear (one of the reasons it's nice to have the monitoring capability). Dolby tracking is consistently excellent, as indicated by the close packing of the B, C, and no-noise-reduction curves. The roll-offs at very high and low frequencies with DBX are caused by built-in filters, designed to prevent the companding circuitry from being fooled by out-of-band information, such as infrasonic signals from warped discs or ultrasonic hash from RFI (radio-frequency interference).

In all other respects, performance is consistently very good to excellent, and with the bias touched up, we were able to

MULTIPLEX FILTER (defeatable)

+ 1/4 dB at 15 kHz, -41 3/4 dB at 19 kHz

S/N RATIO (re DIN 0 dB; R/P; A-weighted)

	Type 2 tape	Type 4 tape	Type 1 tape
without noise reduction			
	53 3/4 dB	54 1/2 dB	52 1/4 dB
with Dolby B noise reduction			
	62 dB	63 1/2 dB	61 1/2 dB
with Dolby C noise reduction			
	69 dB	69 1/4 dB	66 3/4 dB
with DBX noise reduction			
	83 3/4 dB	83 1/2 dB	83 dB

INDICATOR READINGS FOR DIN 0 DB (315 Hz)

Type 2 tape	+ 2 dB (with 2.6% THD)
Type 4 tape	+ 1 dB (with 0.85% THD)
Type 1 tape	+ 1 dB (with 0.45% THD)

INDICATOR READINGS FOR 3% DISTORTION (315 Hz)

Type 2 tape	+ 3 dB (for + 3/4 dB DIN)
Type 4 tape	+ 7 dB (for + 6 dB DIN)
Type 1 tape	+ 5 dB (for + 4 1/4 dB DIN)

DISTORTION (THD at -10 dB DIN; 50 Hz to 5 kHz)

Type 2 tape	≤ 0.91%
Type 4 tape	≤ 0.41%
Type 1 tape	< 0.61%

ERASURE (at 100 Hz)

Type 2 tape	65 1/2 dB
Type 4 tape	56 1/2 dB

CHANNEL SEPARATION (at 315 Hz)

	49 1/2 dB
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INDICATOR "BALLISTICS"

Response time	2.6 msec
Decay time	≈ 1.050 msec
Overshoot	0 dB

SPEED ACCURACY (105 to 127 WAC)

forward	0.8% fast
reverse	0.4% fast

FLUTTER (ANSI weighted peak; R/P)

	≤ 0.11%
--	---------

SENSITIVITY (re DIN 0 dB; 315 Hz)

	120 mV
--	--------

INPUT OVERLOAD (at 1 kHz)

	> 10 volts
--	------------

INPUT IMPEDANCE

	69k ohms
--	----------

OUTPUT IMPEDANCE

	1,950 ohms
--	------------

MAXIMUM OUTPUT (from DIN 0 dB)

	0.66 volt
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REPORT POLICY

Equipment reports are based on laboratory measurements and controlled listening tests. Unless otherwise noted, test data are provided by Diversified Science Laboratories. The choice of equipment to be tested rests with the editors of HIGH FIDELITY. Samples normally are supplied on loan from the manufacturer. Manufacturers are not permitted to read reports in advance of publication, and no report or portion thereof may be reproduced for any purpose or in any form without written permission of the publisher. All reports should be construed as applying to the specific samples tested. High Fidelity and Diversified Science Laboratories assume no responsibility for product performance or quality.

make convincing copies of just about anything we fed into the R-999X. As we have found with other recent decks incorporating circuitry for simultaneous DBX encoding and decoding (for off-tape monitoring during recording), certain types of program material with very wide dynamic range can provoke the DBX into audible hiss pumping, creating a halo of noise around isolated tran-

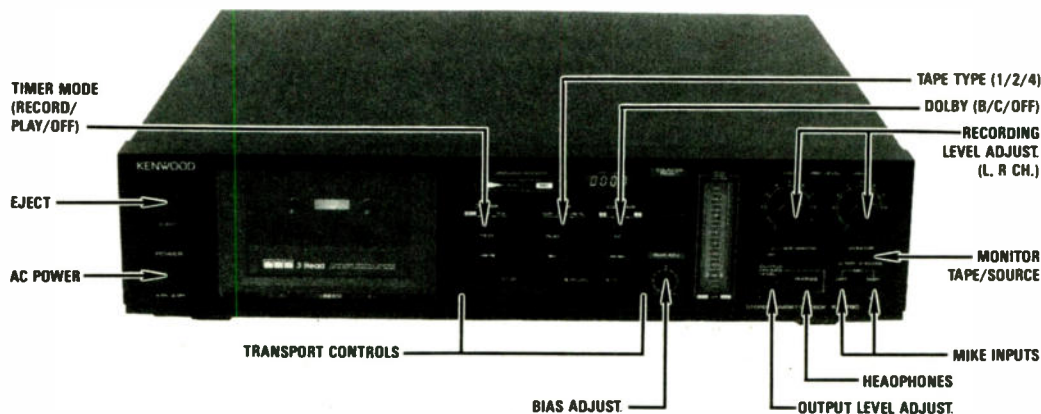
sients. This was particularly apparent on the superb Telarc CD of Copland's *Fanfare for the Common Man* and *Rodeo*. Copies of these were subjectively quieter with Dolby C than with DBX. With less demanding material, however, this ranking usually was reversed. The moral, as always, is that you should choose your noise reduction on a case-by-case basis, which makes it all the more gratifying

that Teac has supplied a full menu of alternatives.

From a human-engineering point of view, the R-999X is one of the best machines we have recently encountered. It is an absolute delight to use. This, together with Teac's customary high-grade construction and the deck's potential for fine performance, make it a worthy contender. ●

KENWOOD KX-780 CASSETTE DECK

Dimensions: 17¼ by 4 inches (front panel), 11¾ inches deep plus clearance for controls and connections. Price: \$355. Warranty: "limited," one year parts and labor. Manufacturer: Trio-Kenwood Corp., Japan; U.S. distributor: Kenwood Electronics, 1315 E. Watsoncenter Rd., Carson, Calif. 90745.



In the KX-780 (and the very similar automatic-reverse KX-790R), Kenwood has walked an exceedingly fine line down the middle of the road, avoiding both extravagance and minimalism in the three salient aspects of component design: features, technology, and price. The result is a good value in a deck that addresses the fundamentals without undue clutter—a task more difficult than it might sound, involving a host of judgment calls, each with as many opportunities to disaffect as to satisfy.

In basic description, the KX-780 is a three-head (monitoring) deck equipped with Dolby B and C noise reduction, microphone inputs, adjustable output level, and manual bias trimming and tape-type selection. Automated features include the usual timer functions, mute recording, rewind-play, and what Kenwood

calls "skip search." This is a random-access mode that doesn't depend on recorded levels, but simply on the length of tape traversed. The former kind, which is commonplace these days, can cue up to the beginning of a song, which Kenwood's can't, but it also can be unreliable with classical music and generally is useless on speech tapes.

To activate the Kenwood random access, you start from PLAY and press either fast-wind button. The counter instantly displays "100" and counts down in either direction of tape wind. When it reaches "000," it reverts to its normal counter function (corrected for the new position on the tape) and the deck reverts to PLAY. If you want to skip farther before checking the content of the tape, extra presses on the same fast-wind button each add 100 to the counter total, post-

poning the return to playback accordingly. Operation is thus quite straightforward. If you're used to open-reel decks or unautomated cassette models—and particularly if you don't use your deck strictly for collections of pop tunes—you may be more at home with this search mode than with a conventional music-seek system.

For recording, it's necessary only to press RECORD, but as a safeguard, the button will work only from STOP. If you want to prepare the deck for recording, you can press PAUSE and RECORD simultaneously, and it will enter the recording-pause mode. However, with Kenwood's transport design, this doesn't give you significantly faster starts than you get from STOP, because both modes retract the head assembly, which takes almost one second to move back into position. If

you tap RECORD while recording, the deck will lay down a four-second blank and enter the recording-pause mode; if you hold the button in, the blank will continue until you let go. To recommence recording (or playback) from PAUSE, you simply press RECORD (or PLAY).

At first glance, Kenwood's use of totally separate left and right recording level controls may seem odd. It complicates balance adjustment and makes perfect fades difficult to achieve in normal operation—that is, with the line inputs. With the mike inputs, however, the separate controls make more sense, because balancing two microphones is more a question of juggling two independent sources. There is no mike/line switch as such; when you plug a microphone into one of the jacks, it automatically disconnects the line feed in that channel. So you can have a (mono) line feed in one channel and a live mike feeding the other. For example, you might record a live vocal over an instrumental piece in this way (although you'd have to switch your stereo system to mono to superimpose the vocal on the accompaniment in final playback). Here again, the separate level controls make sense.

The owner's manual (a rather sketchy single-sheet folder) lists two sets of "reference tapes": three Kenwoods (CD, MD, and ND) and their TDK equivalents (SA Type 2 ferricobalt, or "chrome"; MA Type 4 metal; and AD Type 1 ferric). Because the TDK formulations are much more widely available, Diversified Science Laboratories chose to measure the KX-780 with them. DSL also used C-90s (by far the most popular length and our standard in testing both decks and blank tapes) instead of the C-60s stipulated in the manual.

The response curves, though generally very flat through much of the frequency range, suggest that the deck is set up for tapes that are more sensitive than those we used. The C-60s might have delivered the extra output; so might the premium versions of the Type 2 and Type 1 tapes (SA-X and AD-X, respectively). And in reading the curves, you must allow for the multiplex filter. It adds about 1/2 dB at 15 kHz and reduces output by 35 1/2 dB at 19 kHz when either Dolby option is engaged, but it is

switched out automatically when the noise reduction is turned off. Thus, the solid curves for each tape type cannot be compared directly with the other two at the very tops of our graphs.

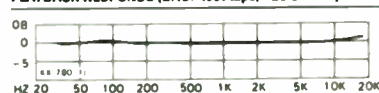
All of the curves except those in the last graph were made with the bias control at its center detent. As you can see by comparing the plots in that graph with the solid (no noise reduction) curve of the one above it, the control offers enough adjustment range to flatten out the treble response of the ferric tape quite well (at the minimum bias setting) and to handle bias-hungry superpremiums (toward the maximum setting). The range is similar with the Type 2 ferricobalt. Surprisingly, the lab could measure no effect on Type 4 tapes. But since these are perhaps the most consistent and certainly the least affected by a given bias change, they stand to profit less, as a group, from bias adjustment.

There is no instrumentation for the bias adjustment, though with the separate playback head in the KX-780, assessment of its effect is relatively easy. You could use a signal generator and adjust the bias for equal output at, say, 1 and 15 kHz. You could also listen to a signal loaded with highs (FM interstation noise is a good source as long as you keep overall level down around -20 dB or below to prevent high-frequency saturation) and A/B the source with the tape while you're recording, adjusting bias for equal brightness in the two.

Working this way in our listening tests, we found that we could make quite respectable-sounding tapes on TDK D (the company's least expensive formulation) by reducing the BIAS control to its minimum, though at the detent the sound was distinctly tubby and muffled. Levels, however, were noticeably lower off the tape than from the source, as a result of D's relatively low sensitivity. Conversely, superpremium formulas (we tried Maxell XL-IS ferric and XL-IIS ferricobalt) yielded excellent level matching and high-frequency balance at the BIAS detent.

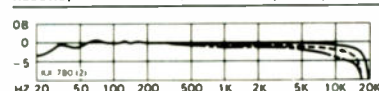
Thus, some improvement in treble response might have been achieved by experimenting with lowered bias in the lab tests, despite DSL's use of the reference formulations. But halting the down-

PLAYBACK RESPONSE (BASF test tape; -20 dB DIN)



— L ch +1 1/4 -1/4 dB, 315 Hz to 18 kHz
 - - - - R ch +1, -1/2 dB, 315 Hz to 18 kHz

RECORD/PLAY RESPONSE, TYPE 2 TAPE (-20 dB)



— L ch +0, -3 dB, 24 Hz to 17.5 kHz
 - - - - R ch +0, -3 dB, 24 Hz to 17 kHz

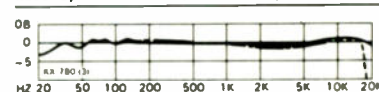
with Dolby B noise reduction

- - - - R ch +0, -3 dB, 24 Hz to 12.5 kHz

with Dolby C noise reduction

- . - - R ch +0, -3 dB, 24 Hz to 7 kHz

RECORD/PLAY RESPONSE, TYPE 4 TAPE (-20 dB)



— L ch +1 1/2, -2 3/4 dB, 24 Hz to 20 kHz
 - - - - R ch +1, -2 3/4 dB, 20 Hz to 20 kHz

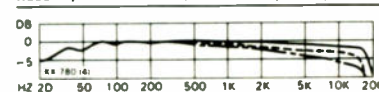
with Dolby B noise reduction

- - - - R ch +1 -3dB, 20 Hz to 17 kHz

with Dolby C noise reduction

- . - - R ch +1, -3 dB, 20 Hz to 17 kHz

RECORD/PLAY RESPONSE, TYPE 1 TAPE (-20 dB)



— L ch +0, -3 dB, 29 Hz to 17 kHz
 - - - - R ch +0, -3 dB, 29 Hz to 16.5 kHz

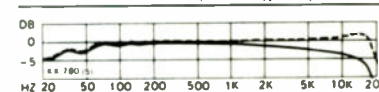
with Dolby B noise reduction

- - - - R ch +0, -3 dB, 29 Hz to 7 kHz

with Dolby C noise reduction

- . - - R ch +0, -3 dB, 29 Hz to 7 kHz

BIAS ADJUSTMENT RANGE (-20 dB; Type 1 tape)



— maximum setting
 - - - - minimum setting

S/N RATIO (re DIN 0 dB; R/P; A-weighted)

	Type 2 tape	Type 4 tape	Type 1 tape
without noise reduction	54 1/4 dB	53 1/2 dB	52 3/4 dB
with Dolby B noise reduction	65 dB	63 1/2 dB	63 dB
with Dolby C noise reduction	73 1/2 dB	72 1/4 dB	72 dB

INDICATOR READINGS FOR DIN 0 DB (315 Hz)

Type 2 tape	+3 dB (with 1.3% THD)
Type 4 tape	+3 dB (with 0.67% THD)
Type 1 tape	+3 dB (with 0.91% THD)

INDICATOR READINGS FOR 3% DISTORTION (315 Hz)

Type 2 tape	+6 dB (for +2 3/4 dB DIN)
Type 4 tape	+6 dB (for +5 3/4 dB DIN)
Type 1 tape	+6 dB (for +3 dB DIN)

ward trend of the Dolby C curves for Type 2 and Type 1 tapes would provide a more dramatic improvement in rated response (based on the frequency at which it is 3 dB down) than in audible performance, which, because the slope is so gradual, is considerably better than you might assume from the numbers alone. In other respects—noise, distortion, erasure, separation, and so on—the measurements are very much what we've come to expect in a well-designed home deck.

The side-by-side vertical level displays for the two channels are calibrated in relatively coarse increments: 3 dB per step from -6 dB up, with additional markers at -10 and -20 dB. (The elements light in pairs, giving the impression of finer divisions.) There are no display elements above +6 dB, which lights at the level of 3 percent third harmonic distortion with all of the formulations

used in the lab testing, so there is no positive indication of when you're actually overloading the tape. As long as you let the +6 elements flash only briefly and infrequently, however, you should be all right. The natural tendency with this display is to peak at about +3, giving a little extra headroom. In live recording, in fact, the limiting factor is likely to be electrical overload of the mike inputs, as it is in most other consumer decks that are so equipped.

But having microphone inputs at all is an extra these days, partly because serious recordists usually prefer outboard mike mixers to the rudimentary controls built into all but specialized tape decks. Also an extra in this price class is the bias adjustment. Otherwise, the KX-780 is essentially both simple and simple to operate. It shouldn't confuse even the greenest of neophytes, despite its overall quality and capability. ●

DISTORTION (THD; at -10 dB DIN; 50 Hz to 5 kHz)

Type 2 tape	≤ 0.55%
Type 4 tape	≤ 0.29%
Type 1 tape	≤ 0.37%

ERASURE (at 100 Hz)

Type 2 tape	75 dB
Type 4 tape	59 3/4 dB

CHANNEL SEPARATION (at 315 Hz)

	44 dB
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INDICATOR "BALLISTICS"

Response time	8 msec
Decay time	≈ 240 msec

Overshoot	0 dB
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SPEED ACCURACY (105 to 127 VAC)	0.4% fast
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FLUTTER (ANSI weighted peak; R/P)	± 0.16%
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SENSITIVITY (re DIN 0 dB; 315 Hz)

line input	105 mV
mike input	0.42 mV

INPUT OVERLOAD (at 1 kHz)

line input	> 10 volts
mike input	32 mV

INPUT IMPEDANCE

line input	80k ohms
mike input	5.4k ohms

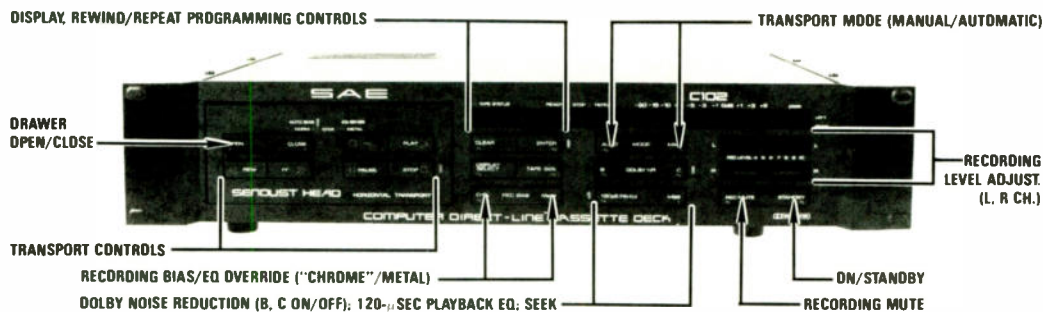
OUTPUT IMPEDANCE

	1,750 ohms
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OUTPUT LEVEL (from DIN 0 dB)	0.59 volt
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SAE C-102 CASSETTE DECK

Dimensions: 19 by 3½ inches (front), 13 inches deep plus clearance for connections and rack-mount "ears." Price: \$429. Warranty: "limited," one year parts and labor. Manufacturer: made in Korea for Scientific Audio Electronics, Inc., P.O. Box 60271, Terminal Annex, Los Angeles, Calif. 90060.



The C-102 is a member of SAE's Direct-Line Series of components, sharing with the others a bold, high-tech look and circuit design that strives for minimal electronic clutter in the signal path (the idea behind the series title) to assure waveform integrity. If you want to use the C-102 free-standing, you can leave in place the black plastic plugs that fill the screw holes in its rack-mount faceplate and add supplied veneered-

plywood end blocks to dress up the chassis. But either way, it's a striking piece.

The two-head transport is mounted in a motorized drawer and works with the drawer open, closed, or even moving in between. With it open, you can flip a cassette quickly when it nears the end of a side during recording, but there's no dust protection if you regularly leave the drawer in that position. The transport controls, which are mounted on the

drawer's front face, are fairly standard in operation. An exception, perhaps, is the RECORDING MUTE (next to ON/STANDBY, below the recording level controls), which is totally manual: It cuts off the input signal for as long as you hold it down. The length of the mute and the switch to RECORDING PAUSE at its end, if that's what you want, are entirely up to you.

Equally unusual, and eminently

practical, is the tape counter, which has three display modes. The default option reads hub turns relative to a zero point, which you can reset wherever you want. It keeps track of the tape's position in any transport mode and even while other display options are in use. If you press DISPLAY SELECT once, a tape length appears in the readout. With TAPE SIZE, you can step it through its repertoire: C-46L (large hub), C-60 (or standard C-46—or, presumably, C-30, whose tape thickness and hub diameter also are essentially the same as those in a C-60), C-90, and C-120. If the transport is moving (or once it starts), this display will flash several times and then show you how many minutes and seconds remain on the tape. The final display option is elapsed recording or playback time since the last resetting, which occurs automatically when you touch one of the fast-wind buttons or DISPLAY SELECT.

There are three modes of automatic operation: "ready" (more commonly known as "auto-stop"), which stops the rewinding transport when it reaches the rewinding counter zero; "stop" (usually called "auto-play"), which switches to PLAY instead of STOP; and REPEAT, whose automatic-rewind trigger point is set by pressing ENTER. If you have set this end "address," the transport will simply halt when it reaches that spot in the "stop" mode—hence the somewhat confusing terminology. If you switch back to manual operation, the C-102 will remember the end setting so that you can revert to an automatic mode later if you want. The "MSS" (music search system) causes the deck to skip over the contents of from one to 20 selections when you press either fast-wind button from PLAY, returning it to playback at the next interselection blank. You set the number of selections to be skipped by tapping the MSS button the appropriate number of times, which then registers in the display window.

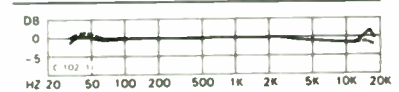
Tape-type selection—that is, setting of bias and EQ—is automatic, based on the standard keyways at the back of the cassette shell. If you're recording, you can override the deck's choice by punching up "chrome" (Type 2) or metal (Type 4) bias, each with its standard high-frequency pre-emphasis for 70-microsec-

ond playback. In playback, there's another override option: 120-microsecond ("standard") de-emphasis for Type 2 or Type 4 cassettes. Most prerecorded chrome cassettes are equalized for this setting, but they have keyways like those in "standard" ferric cassettes (that is, for recording prevention only), so they don't need the switching option. And because the C-102 can't record at bias settings appropriate for Type 2 or Type 4 with EQ for the 120-microsecond playback option, its intended function is somewhat mysterious. The owner's manual (which is well written, but not particularly discursive) says only that "this feature is provided as a convenience to those wishing to listen to their tapes with high frequency . . . boost."

The manual stipulates no specific tapes, but SAE suggested three TDK formulations for Diversified Science Laboratories' tests: SA chrome-compatible ferricobalt for Type 2, MA metal for Type 4, and AD ferric for Type 1. The record/play curves suggest that the deck is adjusted for a somewhat less sensitive Type 2 tape, with an even slighter disparity for Type 4, and that the bias is on the low side for MA. As you can see from the curves for the Type 4 tape, the high-frequency rolloff apparent with the other two formulations is not imposed by the multiplex filter, which is switched out when you turn off the noise reduction. Response is quite flat within the effective passband for each tape. And playback response measures well with the lab's standard BASF test tape, despite noticeable azimuth disagreement between it and the deck.

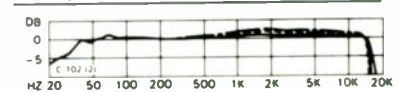
The flutter figure is particularly fine for a deck in this price class. Other measurements represent approximately average performance, which is to say that they're very good. The metering also is quite good. It is calibrated for a 0 indication a few dB below the DIN standard, so that the +3 element lights for DIN 0 dB with Type 2 and Type 4 tapes and the +5 LED for Type 1, presumably to encourage somewhat conservative recording levels, out of deference to the relatively restricted headroom of some ferric tapes. (However, AD proved to have the highest midrange headroom of the three tapes used for the lab tests, actually

PLAYBACK RESPONSE (BASF test tape; -20 dB DIN)



— L ch	+2, -1 1/2 dB, 315 Hz to 18 kHz
- - - R ch	+0, -2 1/4 dB, 315 Hz to 18 kHz

RECORD/PLAY RESPONSE, TYPE 2 TAPE (-20 dB)



— L ch	+ 1/2, -3 dB, 34 Hz to 14.5 kHz
- - - R ch	+1, -3 dB, 32 Hz to 15.5 kHz

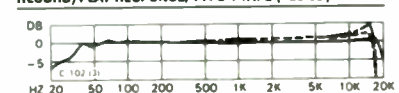
with Dolby B noise reduction

- - - R ch	+2, -3 dB, 32 Hz to 14 kHz
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with Dolby C noise reduction

- • - R ch	+2 1/2, -3 dB, 32 Hz to 14.5 kHz
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RECORD/PLAY RESPONSE, TYPE 4 TAPE (-20 dB)



— L ch	+ 3/4, -3 dB, 33 Hz to 20 kHz
- - - R ch	+ 1/2, -3 dB, 32 Hz to 19.5 kHz

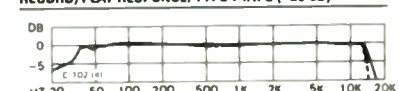
with Dolby B noise reduction

- - - R ch	+2 1/2, -3 dB, 32 Hz to 17 kHz
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with Dolby C noise reduction

- • - R ch	+4 1/4, -3 dB, 32 Hz to 17.5 kHz
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RECORD/PLAY RESPONSE, TYPE 1 TAPE (-20 dB)



— L ch	+1 1/4, -3 dB, 34 Hz to 17 kHz
- - - R ch	+1/2, -3 dB, 33 Hz to 14.5 kHz

with Dolby B noise reduction

- - - R ch	+1/2, -3 dB, 33 Hz to 13.5 kHz
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with Dolby C noise reduction

- • - R ch	+1/2, -3 dB, 33 Hz to 13.5 kHz
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S/N RATIO (re DIN 0 dB; R/P; A-weighted)

	Type 2 tape	Type 4 tape	Type 1 tape
without noise reduction	56 1/2 dB	53 1/2 dB	53 1/2 dB
with Dolby B noise reduction	66 1/4 dB	63 1/2 dB	63 1/2 dB
with Dolby C noise reduction	75 dB	72 1/4 dB	72 1/4 dB

INDICATOR READINGS FOR DIN 0 DB (315 Hz)

Type 2 tape	+3 dB (with 1.5% THD)
Type 4 tape	+3 dB (with 1.7% THD)
Type 1 tape	+5 dB (with 0.81% THD)

INDICATOR READINGS FOR 3% DISTORTION (315 Hz)

Type 2 tape	+5 dB (for +2 dB DIN)
Type 4 tape	+5 dB (for +1 1/2 dB DIN)
Type 1 tape	"peak" (for +2 3/4 dB DIN)

DISTORTION (THD at -10 dB DIN; 50 Hz to 5 kHz)

Type 2 tape	≤ 0.59%
Type 4 tape	≤ 0.57%
Type 1 tape	≤ 0.50%

ERASURE (at 100 Hz)	≥ 75 dB
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CHANNEL SEPARATION (at 315 Hz)	40 dB
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“falling off the top” of the display’s calibrated range when driven to 3 percent third harmonic distortion.)

The display LEDs are green at and below the 0-dB mark and red above, in the range where signal maxima must fall if you’re to get good dynamic range in your tapes. They light at signal increments of 1 dB between -1 and +1 (with respect to the marked 0 dB), for excellent resolution in this area. Outside it, 2-dB steps reach to -7 and +5 (the highest calibrated element). The most sensitive indicator—that is, the one requiring the

least signal in order to light—is at -20. The least sensitive, which is set apart from the calibrated range, is marked simply “peak.”

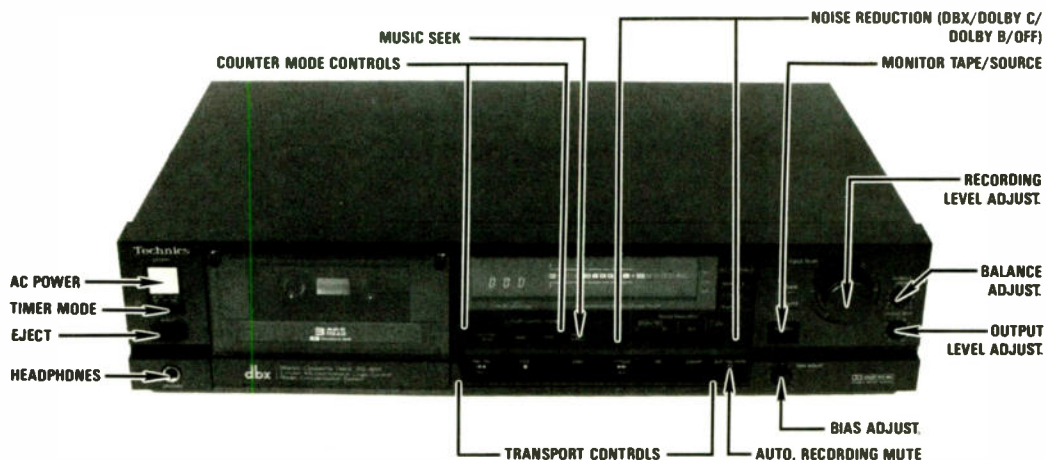
The C-102 exudes a strong—and to us, appealing—sense of individuality, particularly in its styling. We were pleased with the tapes we made on it, staying fairly close to the formulations used for the lab testing. And we were, if anything, even more pleased with the way the deck operated once we had assimilated its unusual control and display elements. ●

INDICATOR “BALLISTICS”

Response time	1.6 msec
Decay time	≈ 250 msec
Overshoot	0 dB
SPEED ACCURACY (105 to 127 VAC)	0.7% fast
FLUTTER (ANSI weighted peak: R/P)	± 0.095%
SENSITIVITY (re DIN 0 dB: 315 Hz)	90 mV
INPUT OVERLOAD (at 1 kHz)	> 10 volts
INPUT IMPEDANCE	57k ohms
OUTPUT IMPEDANCE	990 ohms
OUTPUT LEVEL (from 0 dB)	0.79 volt

TECHNICS RS-B85 CASSETTE DECK

Dimensions: 17 by 3½ inches (front), 10½ inches deep plus clearance for controls and connections. Price: \$480. Warranty: “limited,” two years parts and labor. Manufacturer: Matsushita Electric Industrial Co., Ltd., Japan; U.S. distributor: Panasonic Co., Division of Matsushita Electric Corporation of America, 1 Panasonic Way, Secaucus, N.J. 07094.



Technics has consistently championed DBX noise reduction in cassette decks. In the RS-B85, it combines that system with both Dolby B and C in a medium-price deck equipped with a monitoring head—and therefore requiring double circuitry (for simultaneous recording and playback) for all three noise reducers. It also incorporates the latest technical refinements from Technics: linear feedback to lessen harmonic distortion, compensation circuitry to reduce the typically rather high phase shift generated by analog tape equipment, and

AX amorphous crystal heads.

Essentially, however, the RS-B85 is a relatively simple deck. Although it has more than the minimum complement of features, their deployment clearly is geared for recordists who might shy away from a high-tech approach. So is the owner’s manual. It touches on the salient aspects of the theory behind the design, but the touch is exceedingly light. Even when it comes to instructions for using the bias adjustment, the manual manages to convey the essentials in a few upbeat sentences that are both clear

and sensible without so much as hinting at what bias is or how it works to accomplish what it does.

A number of convenience features are included, most in quite simple form. Press AUTO MUTE at the end of the selection you’re recording, and the RS-B85 inserts a four-second silence before halting in RECORDING PAUSE. Turn on the random-access feature (“music select”), and the deck seeks out the nearest of these blanks when you press either fast-wind key. When the music-select is off and the deck is in PLAY, the fast wind will

continue only as long as you press the key; when you release it, the deck reverts to playback. The monitor automatically switches to SOURCE when the RS-B85 goes into the recording mode and to TAPE for playback, but you can always override its setting manually.

In addition to the usual arbitrary numbers, the counter offers a second mode: a time-remaining display. You set it manually for the tape length with the tape fully rewound, from which point it counts down in minutes and seconds. It doesn't actually measure the length of tape remaining, so it can't tell you whether you'll be able to squeeze an extra minute or two onto a side (as you sometimes can), and it keeps track only of the time you spend in PLAY or RECORD, so fast-winding throws off its calibration. But it can be useful. The deck also has a provision for adding an outboard timer to commence recording or playback automatically.

The manual gives no hint of which tape brands are particularly well suited to the RS-B85. Diversified Science Laboratories took its cue from three cassettes that were packed with the test sample, using TDK SA ferricobalt for Type 2 ("chrome"), MA metal for Type 4, and AD ferric for Type 1. In all cases, it kept the bias control at its center detent, as the manual says to do as normal practice. (Adjustment is by ear; only when a deck provides a more objective procedure does DSL use it as a matter of course.)

The results with SA are disappointing, because the detent setting delivers enough bias to roll off the high frequencies. The multiplex filter, which is down 37 dB at 19 kHz and therefore takes its own bite out of extreme treble response, is cut out automatically when the noise reduction is turned off, so the solid trace in the graph shows response without the filter. Reducing the bias can radically improve on the measured results, as our listening tests demonstrated.

We experimented with Type 1 tapes, in particular, because of the greater available range of ideal bias points and because both Dolby C and DBX push the inherently higher playback hiss levels of these tapes down out of the way of the music. Though the lab's AD doesn't appear to be as severely overbiased as its

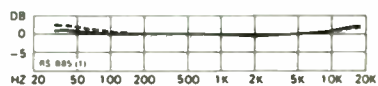
SA, the results clearly could be improved by bias adjustment. And in the listening room, we confirmed that a particularly hot ferric (we used Maxell XL-IS) will deliver its best results at or very near the BIAS detent. Conversely, we were able to get gratifying results with TDK D (a budget ferric) by setting the bias control about halfway between its minimum and the detent.

Technics has chosen not to provide bias adjustment for metal tapes because of their relatively high degree of mutual similarity, requiring little change from one to another. Unfortunately, the chosen bias point seems a little high for MA, rolling off the treble response a bit—though not nearly to the same extent as that of SA at the BIAS detent. High-frequency headroom, as revealed by response sweeps at DIN 0 dB, is surprisingly good, considering the inherently high bias points, which introduce premature self-erasure. With the same tapes and lower bias or the same bias and hotter tapes, therefore, headroom should be excellent for a deck with no special headroom-extension circuitry beyond that designed into Dolby C at extremely high frequencies.

The metering seems designed to increase headroom even further unless you pay due attention to the manual. The "0 dB" of the level display is set very low: 8 dB below DIN reference level. If you record so that maxima fall near this marked 0 dB, you'll be wasting a good deal of the recorder's dynamic range. The manual, however, says you can let peaks run to +4 with Type 1 or Type 2 tapes and +6 with Type 4, with occasional excursions a dB or two higher. And the DBX noise reduction, whose companding action pulls down high-level signals during recording, enables you to run a couple dB hotter yet. These recommendations put maximum signal levels up near DIN 0 dB, which still leaves additional midrange headroom for unnoticed peaks, as you can see in the data for indicator readings at 3 percent distortion (so-called maximum recorded level).

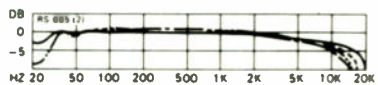
The display graphics also encourage recording above the 0-dB mark, coloring the range below white; that from 0 to +6, amber; and that above +6, red. The display advances in 2-dB steps from -8

PLAYBACK RESPONSE (BASF test tape; -20 dB OIN)



— L ch	+2 1/4, -1/2 dB, 315 Hz to 18 kHz
- - - R ch	+1 3/4, -1/2 dB, 315 Hz to 18 kHz

RECORD/PLAY RESPONSE, TYPE 2 TAPE (-20 dB)



— L ch	+0, -3 dB, 26 Hz to 10 kHz
- - - R ch	+0, -3 dB, 20 Hz to 10 kHz

with Dolby B noise reduction

- - - R ch	+1/4, -3 dB, 20 Hz to 9 kHz
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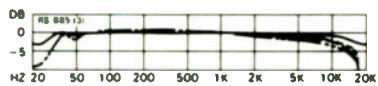
with Dolby C noise reduction

- - - R ch	+3/4, -3 dB, 20 Hz to 6.5 kHz
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with DBX noise reduction

- - - R ch	+1, -3 dB, 31 Hz to 8.5 kHz
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RECORD/PLAY RESPONSE, TYPE 4 TAPE (-20 dB)



— L ch	+1/2, -3 dB, 27 Hz to 20 kHz
- - - R ch	+0, -3 dB, 20 Hz to 17 kHz

with Dolby B noise reduction

- - - R ch	+1/4, -3 dB, 20 Hz to 12 kHz
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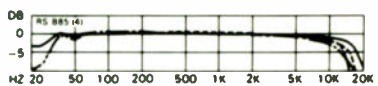
with Dolby C noise reduction

- - - R ch	+1/2, -3 dB, 20 Hz to 11.5 kHz
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with DBX noise reduction

- - - R ch	+0, -3 dB, 32 Hz to 8 kHz
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RECORD/PLAY RESPONSE, TYPE 1 TAPE (-20 dB)



— L ch	+0, -3 dB, 27 Hz to 17 kHz
- - - R ch	+0, -3 dB, 25 Hz to 15.5 kHz

with Dolby B noise reduction

- - - R ch	+1/4, -3 dB, 25 Hz to 12 kHz
------------	------------------------------

with Dolby C noise reduction

- - - R ch	+1/2, -3 dB, 25 Hz to 10 kHz
------------	------------------------------

with DBX noise reduction

- - - R ch	+1/2, -3 dB, 32 Hz to 12 kHz
------------	------------------------------

BIAS ADJUSTMENT RANGE (-20 dB; Type 1 tape)



—	maximum setting
- - -	minimum setting

S/N RATIO (re DIN 0 dB; R/P; A-weighted)

	Type 2 tape	Type 4 tape	Type 1 tape
without noise reduction	56 3/4 dB	53 dB	53 1/2 dB
with Dolby B noise reduction	66 3/4 dB	63 3/4 dB	63 1/2 dB
with Dolby C noise reduction	74 1/2 dB	71 1/2 dB	71 3/4 dB
with DBX noise reduction	80 dB	78 1/2 dB	80 1/4 dB

INDICATOR READINGS FOR DIN 0 DB (315 Hz)

Type 2 tape	+8 dB (with 1.5% THD)
Type 4 tape	+8 dB (with 0.66% THD)
Type 1 tape	+8 dB (with 1.2% THD)

to +8. There are additional calibrated steps at -12, +12, and +18 and uncalibrated steps below -12, as well as one at -40 at the bottom end of the scale. The attack and release times both are quick, but maxima remain visible longer— even for signals below 0 dB, where more typical peak-hold indicators no longer function. All told, the metering design seems well calculated, despite its somewhat nonstandard approach.

In other respects, the RS-B85 is fairly typical of decks in its price class. The beginning recordist (for whom the manual, in particular, seems tailored) will

INDICATOR READINGS FOR 3% DISTORTION (315 Hz)

Type 2 tape	+ 12 dB (for + 2 1/4 dB DIN)
Type 4 tape	> + 18 dB (for + 6 3/4 dB DIN)
Type 1 tape	+ 12 dB (for + 2 1/2 dB DIN)

find that it delivers a number of features—for both good performance and handy operation—that aren't available in many comparably unimposing models. In the end, however, it is Technics's inclusion of all three standard noise reduction options in a medium-price monitoring deck that defines the RS-B85's appeal.

DISTORTION (THO at -10 dB OIN; 50 Hz to 5 kHz)

Type 2 tape	< 0.45%
Type 4 tape	≤ 0.32%
Type 1 tape	≤ 0.34%

ERASURE (at 100 Hz) ≥ 62 1/2 dB

CHANNEL SEPARATION (at 315 Hz) 51 1/2 dB

INDICATOR "BALLISTICS"

Response time 17 msec

Decay time ≈ 250 msec

Overshoot 0 dB

SPEED ACCURACY (105 to 127 VAC) 0.4% fast

FLUTTER (ANSI weighted peak; R/P) < 0.18%

SENSITIVITY (re OIN 0 dB; 315 Hz) 110 mV

INPUT OVERLOAD (at 1 kHz) > 10 volts

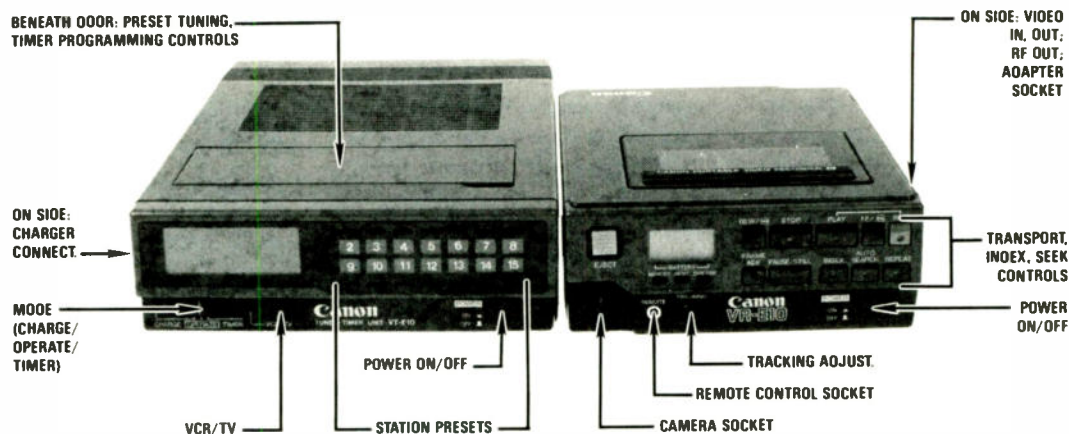
INPUT IMPEDANCE 52k ohms

OUTPUT IMPEDANCE 1.430 ohms

MAXIMUM OUTPUT (from OIN 0 dB) 0.70 volt

CANON VR-E 10 8mm PORTABLE VCR AND VT-E 10 TUNER/TIMER

Dimensions: VCR, 6 1/4 by 2 1/2 inches (front, cassette well closed), 7 1/2 inches deep (without battery pack); tuner/timer, 7 1/2 by 2 1/2 inches (front), 10 1/4 inches deep plus clearance for connections. Price: VCR, \$900; tuner/timer, \$300. Warranty: "limited," one year parts, 90 days labor. Manufacturer: made in Japan for Canon U.S.A., Inc., Video Div., 1 Canon Plaza, Lake Success, N.Y. 11042.



If you've been reading us regularly, you're probably aware that there's a new video recording format on the street: 8mm (quarter-inch), which uses tape cartridges not much larger than an ordinary audio cassette. Prototype 8mm VCRs were demonstrated quite some time ago, but only in the past year or so has the equipment become available to consumers.

Despite superficial differences, an

8mm VCR works much like a Beta or VHS deck. All three transpose the chroma information into a baseband signal and use an FM carrier to record the luminance signal, both laid down in diagonal stripes across the tape by a pair of rotating heads. Because 8mm tape is only about half the width of ordinary consumer videotape, the information density of the recorded signal is much higher and therefore requires more exotic formula-

tions. The most common is a metal-particle (MP) tape similar to that used in Type 4 audio cassettes. (The half-inch Beta and VHS tapes are more akin to Type 2 audio formulations.) Still-more-advanced metal-evaporated (ME) tapes have been developed, permitting even higher recording densities, but the Canon unit is designed for the less expensive and more readily available MP product.

Three audio recording methods are sanctioned by the 8mm standard: monophonic linear recording along the edge of the tape, monophonic audio frequency-modulation (AFM) recording, and stereo PCM (pulse-code modulation) digital recording. Of these, only the second *must* be included in a VCR claiming adherence to the standard, and this is the only system the Canon VR-E10 provides. It is very similar to Beta Hi-Fi (and, to a lesser extent, VHS Hi-Fi) but with just a single channel. Since AFM is head and shoulders above edge-track recording with respect to frequency response, dynamic range, and pitch stability, the only rationale for including linear recording in an 8mm deck would be to back up the AFM system in case of a dropout. Although dropouts have been a minor problem with some of the Beta and VHS Hi-Fi recorders we've used, we experienced no such difficulties with the VR-E10 in the time that it was available to us. We tested the VR-E10 in conjunction with its companion VT-E10 tuner/timer. When they are used together, the recorder is powered from the line-operated tuner, but you can run the VCR alone from a rechargeable battery pack (BP-E10), a car battery (via a CB-E10 adapter cable), or Canon's VP-E10 AC power supply.

Despite its remarkably small size and light weight, the VR-E10 has just about every feature you could expect in a portable VCR. Front-panel controls are cleanly spaced and lie nicely under the fingers, and most of the basic functions are self-explanatory. Three, however, deserve special mention.

Pressing REPEAT during playback causes the deck to rewind with a visual review of the program. This is similar to a conventional review function (available on the VR-E10 by touching REWIND during playback). The difference is that when you release the REPEAT, the rewind segment is shown five times before normal playback resumes. You can defeat this sequence by pressing PLAY.

Pushing INDEX SEARCH during playback rewinds the tape to the point at which the deck last entered PAUSE or RECORD and initiates playback from that point. You can index forward by pressing both INDEX SEARCH and FAST-

FORWARD/SEARCH. AUTO SEARCH works from either STOP or PLAY, fast-winding the tape to the beginning of the next blank segment and then putting the deck into PAUSE. If you press REWIND/REVIEW after AUTO SEARCH, the tape rewinds to the previous blank segment. All transport functions—including INDEX, AUTO SEARCH, and REPEAT—are accessible via a wired remote-control unit that plugs into a minijack below the display panel.

The VR-E10's LCD panel offers multiple functions. First is a four-digit tape counter that doubles as a time-remaining indicator when you hold down the appropriate button. It registers in 10-minute increments when more than 50 minutes are left, in 5-minute increments down to 10 minutes remaining, and in 1-minute steps below that; when the tape runs out, the display reads "END." Another button resets the counter, and a third activates the MEMORY, turning on an *M* in the display. It stops the tape automatically at counter zero when rewind.

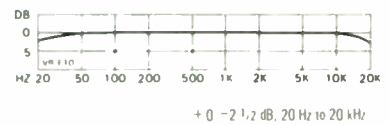
Condensation ("dew") on the rotating heads causes a flashing *d* to appear in the display and turns off the recorder. If you are using a compatible camera with the VCR, a block *S* comes on when the camera is in its standby mode. Two bars and the legends *E* and *F* indicate the battery's state of charge. Both bars and legends appear with a fully charged battery; as it runs down, the *F* and right bar disappear, and as it approaches complete discharge, the *E* blinks. Finally, the display blanks out and a flashing *b* appears.

The VR-E10 connects to the VT-E10 tuner/timer via a multiconductor power/signal cable and a patch cable that carries the VCR's RF output (on Channel 3 or 4) back to the tuner, from which it can be routed to a TV set. If you're not using the VT-E10, the VCR can drive a TV set directly from its RF output (a standard F connector) or a monitor and amplifier from direct audio and video outputs (phono jacks). There are no direct audio or video input jacks on the VCR. It can record only from a camera, the TV tuner of the VT-E10, or the line input jacks provided on the VT-E10. A slide switch on the back of the tuner/timer determines whether the signals from the tuner or from the line inputs are fed to the recorder.

VCR SECTION

All measurements were made at the direct audio and video outputs, with test signals injected through the direct audio and video inputs. The 0 dB reference input level is 10 dB above the voltage at which the automatic level control (ALC) produces 3 dB of compression at 315 Hz. The 0 dB reference output level is the output voltage from a 0 dB input.

RECORD/PLAY RESPONSE (-20 dB; mono)



+0 -2 1,2 dB, 20 Hz to 20 kHz

AUDIO S/N RATIO (re 0-dB output; R/P; A-weighted) 76 3/4 dB

DISTORTION (THD at -10-dB input; 50 Hz to 5 kHz) ≤ 1.88%*

FLUTTER (ANSI weighted peak; R/P) * < 0.010%

SENSITIVITY (for 0-dB output; 315 Hz) 2.16 volts

AUDIO OUTPUT LEVEL (from 0-dB input; 315 Hz) 0.80 volt

AUDIO INPUT IMPEDANCE 160k ohms

VIDEO RECORD/PLAY RESPONSE

at 500 kHz -1 dB

at 1.5 MHz -7 dB

at 2.0 MHz -14 dB

at 3.0 MHz †

LUMINANCE LEVEL 10% high

GRAY-SCALE NONLINEARITY (worst case) ≈ 16%

CHROMA LEVEL ≈ 3 dB low

CHROMA DIFFERENTIAL GAIN ≈ 5%

CHROMA DIFFERENTIAL PHASE ≈ +4°

MEDIA CHROMA PHASE ERROR ≈ 0°

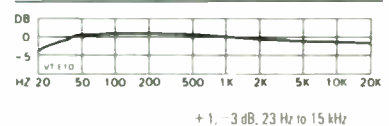
*See text

†Too low to measure

TV TUNER SECTION

All measurements were taken at the direct audio and video outputs.

AUDIO FREQUENCY RESPONSE (mono)



+1, -3 dB, 23 Hz to 15 kHz

AUDIO S/N RATIO (mono; A-weighted)

best case (no color or luminance) 42 3/4 dB

worst case (crosshatch pattern) 14 3/4 dB

RESIDUAL HORIZONTAL-SCAN COMPONENT (15.7 kHz)

-49 dB

MAX. AUDIO OUTPUT (100% modulation) 0.48 volt

AUDIO OUTPUT IMPEDANCE 100 ohms

VIDEO FREQUENCY RESPONSE

at 500 kHz +1.4 dB

at 1.5 MHz +1/4 dB

at 2.0 MHz -1/4 dB

at 3.0 MHz +3/4 dB

at 3.58 MHz -3 dB

at 4.2 MHz -20 dB

LUMINANCE LEVEL 12% high

GRAY-SCALE NONLINEARITY (worst case) ≈ 11%

The VT-E10's RF inputs and outputs are 75-ohm F connectors for VHF, 300-ohm binding posts for UHF. Channel selection is via 14 front-panel pushbuttons; there is no remote control for this function. The tuner is factory set for VHF Channels 2 through 13 and UHF Channels 14 and 15, but it can be reprogrammed with controls hidden under a top-panel cover. Each pushbutton has its own tuning control and a three-position switch that determines the band in which the control functions: low VHF (Channels 2 through 6), high VHF (Channels 7 through 13 and CATV Channels A through I and J through W), or UHF (Channels 14 through 83). The VT-E10's 4-event/14-day programmer and digital clock also are set with controls under the top cover. A display indicates the time of day, the day of the week, and the programmer status. The programmer will retain its memory through a ten-minute power outage, but if power is cut off during timer recording, the system shuts down and does not resume recording when power is restored.

Tuner performance is very good. Diversified Science Laboratories' tests show video response extending slightly beyond the color-burst frequency (3.58 MHz), which implies a horizontal resolution of about 300 lines if the signal is fed directly (not off tape) to a good monitor. Luminance level is a trifle high and chroma level a trifle low, but both are closer to the mark than average and easily corrected at the monitor. Average chroma phase error is low, and the spread (uncorrectable error) is a negligible $\pm 2\frac{1}{2}$ degrees—almost perfect performance. Chroma differential phase also is admirably low, and the differential gain is confined to the highest luminance level and thus affects only the brightest scenes. This indicates that hue and color saturation do not vary significantly with brightness. All in all, the VT-E10 is capable of admirable color rendition.

Audio performance also is a step above the norm. Frequency response slopes very gradually but is still surprisingly good for a TV tuner. Despite the extended high-frequency response, the horizontal-scan component at 15.7 kHz is well suppressed, and overall noise is quite low on normal pictures, although

repetitive images like those in test patterns produce a good bit of buzz. Output level and impedance are well suited for driving typical equipment.

Probably because the VR-E10 is conceived primarily as a portable VCR, audio recording level is governed by an automatic level control (ALC); there is no manual option. Accordingly, DSL established a reference input level 10 dB above the ALC's 3-dB compression point. Although a substantial input (2.16 volts) is required to reach this recording level, the knee of the ALC curve occurs at about 680 millivolts (mV) and the slope above the knee is somewhat more gradual than average. This means that at typical levels the VR-E10 probably will be recording below the knee of the ALC curve, trading a slight bit of signal-to-noise (S/N) ratio for more perfect dynamics and lower distortion. The ALC is there mainly to prevent overload from very strong signals.

The A-weighted S/N ratio is almost 77 dB, so trading off a few dB for better dynamic rendition is a wise choice. Distortion at the knee of the ALC curve is well below 1 percent from 100 Hz to 6.3 kHz and less than 2 percent at 50 Hz and 10 kHz. At typical recording levels, distortion is likely to be even less. Input impedance is very high, so there's no worry about loading the driving source.

Frequency response is much better than Canon specifies—within +0 dB, $-2\frac{1}{2}$ dB from 20 Hz to 20 kHz. Unfortunately, the 8mm standard does not spell out the characteristics of the noise reduction system to be used in AFM recording, leaving open the question of compatibility between machines. Canon advises us that the system used in the VR-E10 is a linear compander similar to (but apparently not identical with) DBX. As we would expect with such a system, there was no evidence of mistracking over DSL's 40-dB test range. The only anomaly we noted was a $\pm \frac{1}{2}$ -dB response ripple at the lowest test level. The lab could not identify the source of this effect but speculates that it may have been caused by crosstalk from the adjacent track on the tape. In any event, the phenomenon is so small and occurs at such a low level that it cannot be heard.

CHROMA DIFFERENTIAL GAIN	$\approx 28\%$	
CHROMA DIFFERENTIAL PHASE	$\approx \pm 4^\circ$	
CHROMA ERROR	level	phase
red	-1 3/4 dB	+4°
magenta	-1 3/4 dB	+4°
blue	-1 3/4 dB	+3°
cyan	-2 dB	+8°
green	-2 dB	+6°
yellow	-2 dB	+8°
median error	-1 7/8 dB	+5 1/2°
uncorrectable error	$\pm 1/8$ dB	$\pm 2 1/2^\circ$

Flutter is below our reporting limit.

Considering the high recording density used in the 8mm format, video response is respectable—down 7 dB at 1.5 MHz. This translates to a horizontal resolution of about 120 lines, compared with approximately 160 lines for the best Beta and VHS decks. Luminance level is about 1 dB higher than standard, and grayscale linearity is adequate. Chroma level (color saturation) is 3 dB low, but the phase response (hue) is essentially perfect. Chroma noise also is very low—comparable to or better than that of half-inch VCRs. Chroma differential gain and phase, too, are at least as good as you'd expect from a Beta or VHS recorder. What this all boils down to is a picture with excellent color rendition but with somewhat less sharpness than that provided by a conventional VCR.

If your main use for a VCR is time-shifting and broadcast recording, the longer recording time and better resolution of a good Beta or VHS deck outweigh the advantages of Canon's 8mm system. Moreover, a half-inch Hi-Fi recorder can give you stereo audio with fidelity comparable to that of the mono-only VR-E10, and without limiting or compression. However, for portable recording with a good camera, the Canon VR-E10 has a lot going for it. It's small and light and has excellent audio performance, respectable video resolution, and fine color reproduction. And with its companion VT-E10 tuner/timer, it can serve as a broadcast recorder for programs that are not more than 90 minutes long. Check it out. Until you've lugged around a Beta or VHS portable for a day, you can't fully appreciate the benefits of the 8mm format. ●

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Mono sounds, even when played through two speakers, appear to come from one direction (the center).

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The stereo/mono test is really simple; plug the Teledapter up, push the mono-stereo button on



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Teledapter comes complete with all cables, instructions, and a FREE HELP-line phone number.

*DNR is a registered trade mark of National Semiconductor Company

your stereo. When you go from mono to stereo, listen to the sounds spread out across the room. Perform the test without a Teledapter and a mono signal will remain in the center.

Ambiance and Spatial Circuits expand a stereo signal to greater separation than it normally has.



At the same time, indirect delayed signals and echoes are accentuated.

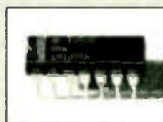
DNR® is the latest marvel in noise reduction. It works with all mono or stereo programs, and preserves the Teledapter's excellent 20 to 20,000Hz frequency response.

Tape Monitor Loop allows all the features of Teledapter to be used with all other stereo or mono components, FM, tapes, records, AM, etc.

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MEDLEY

*Edited by
Georgia Christgau
and Ted Libbey*



A Studio Grows In Brooklyn

Since the halcyon days of bebop, Max Roach has been an incendiary drummer and a catalyst for musical and social change. His landmark recording, 1961's *Freedom Now Suite*, was one of the first jazz recordings to link the U.S. civil rights movement with the anticolonial struggles of Africa. Some 20

years later, Roach put to music portions of Dr. Martin Luther King's famous "I Have a Dream" speech, reaffirming his commitment to the merger of art and politics. Though his sometimes outspoken views have earned him the ire of the recording industry, he remains a paragon and creative force of jazz drumming.

Roach is still a favorite in Brooklyn, too, where he grew up. Last January 15

(King's birthday), the residents of Bedford-Stuyvesant toasted their native son with a celebration of his own sixty-first birthday. But the event, which attracted more than 200 people (among them, Art Blakey, Cecil Payne, Walter Davis, and Otis Blackwell), was as much party as homecoming. See, Roach had spent the previous two weeks recording an album with his double quartet—a group including

Odean Pope, Tyrone Brown, Cecil Bridgewater, and strings led by his daughter Maxine—at a unique, and uniquely local, studio.

The Platinum Factory, built six years ago with a grant from CBS, is a first-class operation staffed by professionals (stressing local talent and technicians) that charges reasonable rates. According to director Derek McDowell, the grant was the first of its kind. It provides for something called a "Breakthrough Package," which each Sunday makes the 24-track studio available to a band for five hours for making demo tapes (at a mere \$250). Just recently, Strafe recorded the cult hit "Set It Off" on Jus Born [reviewed in Vince Aletti's "12-inch Report," June] and its new A&M single, "Re-act (Just Play the Music)," at the studio. Other artists who have graced the premises include Randy Weston, Betty Carter, Mtume, and Hugh Masekela.

Part of Roach's use of the Factory involves his desire to search out and promote musically gifted local youngsters. "I've always had it in the back of my mind to start a school," he claims, "and Brooklyn would be ideal, or maybe Harlem. But I travel so much, and teaching is a full-time job as it is. The real hurdle is finding the money so I can get the facilities. There's a lot of good people around New York who could do the teaching."

Don Palmer

Worthy Cause: American Music

The letter from American Express arrived at my office last week. There was a press release inside, saying that Angel EMI's world-premiere recording of recently commissioned violin concertos by Earl Kim and Robert Starer—written for Itzhak Perlman and recorded by him and the Boston Symphony Orchestra under Seiji Ozawa—had been made possible by grants from the American Express Foundation and the National Endowment for the Arts.

The release included a quotation from Susan Bloom, vice president for cultural affairs at American Express, that said in part, "We are delighted and proud that the foundation's first recording grant has made the music of Mr. Starer and Mr. Kim available to the public. . . ." Well, the public—record-buying or otherwise—has known the

music of Starer and Kim for a long time, but at least American Express has its heart in the right place.

There is no shortage of good music written by American composers (and played by American performers) that deserves to be made "available to the public." For example, what foundation is ready to step in and underwrite a recording of Gunther Schuller's concertos for contrabassoon and for bassoon? Both were commissioned by the National Symphony Orchestra, and the former is the first contrabassoon concerto ever composed. The other work received its premiere in May with the orchestra's principal bassoonist, Kenneth Pasmanick, serving as soloist.

Another venture that should be supported while the time is ripe is Marilyn Costello's planned recording of harp works by Carlos Salzedo. April 6 marked the centennial of Salzedo's birth; he is one of the most impressive figures in

the history of the harp, and he made important contributions to the American musical scene as composer, performer, and pedagogue. Costello, principal harpist of the Philadelphia Orchestra, was one of his students. I have heard her demo tape of selected Salzedo compositions, and she plays them marvelously.

With the emphasis in the recording industry increasingly on safe bets, it's important for institutions that care about the future of American music to fund projects that might otherwise be shelved as unprofitable. It is a worthy gesture of Perlman and the Boston Symphony to lend their prestige to the music of living Americans—but it should not be necessary to have big names on the contract before a record label will rise to the occasion. There are many less well-known, but no less accomplished, artists out there who, as advocates of the American composer, should be heard.

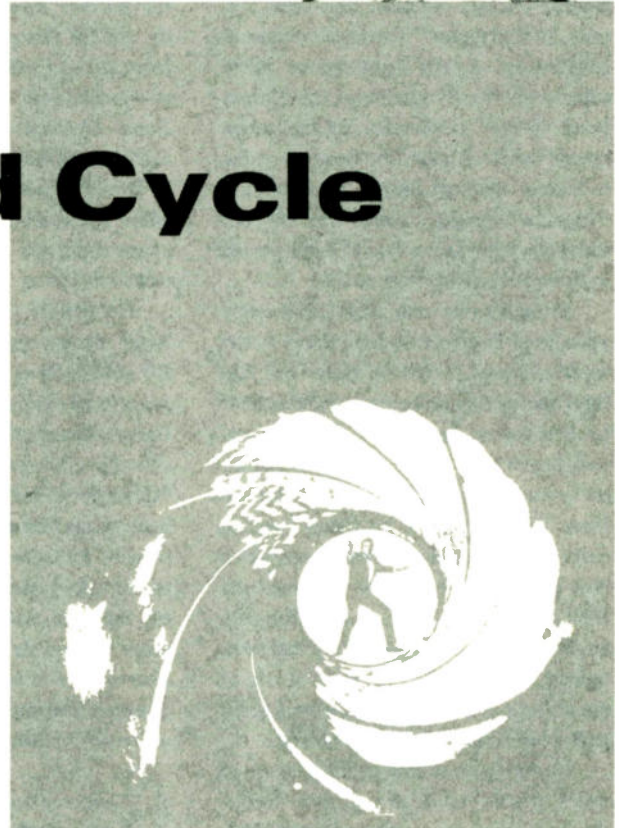
Ted Libbey



The Bond Cycle

Drawing a Bead On the 007 Soundtracks

by Noah André Trudeau



A well-dressed figure walks casually into view on the screen; he turns, genuflects slightly, and fires at the movie audience. That scene may well be the most celebrated of cinematic rituals. Recreated with modest variations since the early '60s, it has heralded 15 James Bond films (not counting the satirical *Casino Royale*) that have defined a genre, from *Dr. No* to the latest adventure, *A View to a Kill*.

Accompanying this ritual is some distinctive and stylish music. Indeed, it's fair to say that the "sound of Bond" is as much a part of 007's image as are Q's lethal devices, Moneypenny's frustrated flirting, or the outrageous villainy of the protagonist's adversaries. Each of the Bond films has had an original score *and* a soundtrack recording. Examining the scores in the aggregate, and noting that there are certain thematic motives threading their way through all but one of them, the reviewer is tempted to make comparisons that are, well,

just one step short of Wagnerian.

Dr. No (1962) launched the Bond "cycle." Say a quick hello and goodbye to Monty Norman, who turned in a routine jazz-rock score interlaced with lots of calypso music (Liberty LT 50275). Norman would be completely forgotten today save for his creation of the now famous "James Bond Theme." But at least one Bond film expert disputes Norman's authorship. In his otherwise authoritative book *The James Bond Films* (Arlington House), Steven Jay Rubin claims: "Although Monty Norman is credited as the music composer on *Dr. No*, it was John Barry who created the striking . . . theme that became the instant trademark of the series." Rubin explains that *Dr. No* producers Albert Broccoli and Harry

Saltzman, unhappy with the theme Norman had penned, turned on short notice to Barry, who "was simply handed a timing sheet and told to come up with a two-and-a-half-minute theme. . . ." What's more, part of the theme allegedly came from an earlier Barry pop number called "Bea's Knees," "which featured that same distinct plucked guitar." The hard evidence is conflicting. Every subsequent Bond soundtrack clearly attributes the "James Bond Theme" to Norman. Yet the screen credits for *Dr. No* list Eric Rodgers as the conductor and Burt Rhodes as the orchestrator for Norman's score, with the further note, "The James Bond Theme played by John Barry and Orchestra."

From Russia with Love (1963) really introduced Englishman John Barry to the world (Liberty LT 55114). Barry had had three partial film-score assignments under his belt before *Dr. No* and a varied jazz-rock career before that. His family operated several movie houses in Britain, so there was celluloid in his blood from an early age. Beginning a music career with a beat group in Soho, he later formed the John Barry Seven, a backup band for singer Adam Faith. Although Barry had been tapped to supply some cues for a trio of minor films in the early '60s, *From Russia with Love* was his first major credit.

It was a devastating debut. The sound Barry creates for Bond is at once distinctive, appealing, and tremendously effective, an explosive mixture that turns away from the traditional Hollywood string dominance of the time to find its strength in virtuoso brass writing, clever percussion doublings, and adroit use of harmonics. In lieu of composing a lot of tunes, Barry provides a seemingly inexhaustible series of fascinating episodic cues. He also sets a precedent with his clever, at times brilliant, integration of the Bond theme into the fabric of the score. (And he includes a syncopated, marchlike cue called "007," destined to become one of the sec-

ondary leitmotifs in his scores to follow.)

In addition, *From Russia with Love* contains the first Bond title song. Penned by Lionel Bart and performed by Matt Monro, this ballad establishes the curious tradition of the Bond song whose lyrics have little, if anything, to do with the film's story. All of the songs up through the one for *Octopussy*, together with the Norman/Barry theme from *Dr. No*, are now available in a collection called *James Bond: 13 Original Themes* (Liberty LO 51138). The tradition carries on to this day in Duran Duran's "A View to a Kill," which the band co-wrote with Barry. [At press time, his full soundtrack to the newest film was unavailable for review.]

Goldfinger (1964) is one of the best Bond movies and soundtracks (Liberty LW 55117). From the first note of the title song, lustily belted out by Shirley Bassey, Barry's score delivers the goods. There's some pre-minimalism in a cue titled "Dawn Raid on Fort Knox," where Barry holds us spellbound for six minutes and 40 seconds with a seemingly mindless ostinato just lightly garnished at key psychological moments. A German pressing of this score (United Artists 054-97303) contains four cuts not found on the American pressing (and omits one that is), making it necessary to own both soundtracks.

Gadgets began to dominate the story line with the release of *Thunderball* (1965), but Barry's scoring remains purely instrumental and blessedly ungimmicked (Liberty LT 55132). His habit of successively repeating simple motivic ideas, coupled with a softly focused recorded sound, effectively creates a wavery, watery musical canvas for the film. He even manages to incorporate the dry-bones timbre of a harpsichord into some of the cues, with magical effect. Tom Jones gives a characteristic, if not especially inspired, performance of the title song, with lyrics by Don Black. Although the printed contents are

identical for the mono and stereo domestic versions of this soundtrack, the instrumental introductions to the cut called "Mr. Kiss Kiss Bang Bang" are different.

The good news about Barry's score for *You Only Live Twice* (1967) is that he explores new musical ground and touches upon an uncommonly wide range of moods (Liberty LT 50289). To complement a film set mostly in Japan, Barry deploys traditional Japanese instruments within the conventional orchestra in ways that are refreshingly un clichéd. The bad news is that the album sounds as if it were recorded in a phone booth. Nancy Sinatra's detached, emotionless rendition of the title song (lyrics by Leslie Bricusse) does only minor damage to Barry's haunting tune.

Exit Sean Connery, enter George Lazenby for *On Her Majesty's Secret Service* (1969). Fortunately, Barry remained on the scene to produce one of his most visceral scores (Liberty LT 51134). Still reaching in new directions, he uses electronics (a synthesizer, I think) for the first time. These sounds are part and parcel of the whole score, which is largely instrumental, and the combination is a complete success. To evoke the film's mountaintop setting, Barry places some of his instruments *derrière la scene* (as Berlioz would have said it). Barry and lyricist Hal David wrote what was supposed to be the opening song, "We Have All the Time in the World." An ailing Louis Armstrong was asked to sing it and gratefully accepted. (Remembers Barry: "At the end of the recording session in New York City, he came up to me and said, 'Thank you for this job.'") Too heavy to open an action/adventure flick, the song was buried in the middle of the film, though it did become a No. 1 hit in Italy.

A bored-looking Connery came back for *Diamonds Are Forever* (1971), and, sad to say, his cinematic adventures are tracked by a bored-sounding Barry (Liberty LT 50301). Even Bassey's powerfully

(Continued on page 80)

T H E S C O R E O N B O N D

BEST SCORES

Goldfinger.
From Russia with Love.
On Her Majesty's Secret Service.
Thunderball.
Octopussy.

WORST SCORES

Diamonds Are Forever.
The Man with the Golden Gun.
For Your Eyes Only.
Dr. No.
Never Say Never Again.

BEST TITLE SONG

Goldfinger
(sung by Shirley Bassey).

WORST TITLE SONG

Never Say Never Again
(sung by Lani Hall).

A 16-pack to Go

MOZART:

Chamber Works, Concertos, Serenades, Symphonies, Requiem.

Various artists. Gregor Benko, prod. Time-Life Music PMZ 4T-01/16 (A). (541 N. Fairbanks Ct., Chicago, Ill. 60611.)

Once I tried to answer (positively, natch) the not-entirely-preposterous question "Would Mozart Have Been a Hi-Fi Fan?" (January 1956). And much of the "letterary" and biographical evidence I advanced then still bolsters the belief that Wolfgang's inexhaustible enthusiasms, sonic and otherwise, surely would have made him an adherent of the "Walkabout" stereo, and inclined him toward a type of personal listening unimaginable in the 18th century. How a Walkman and a supply of cassettes would have thwarted the tedium of the extended coach trips Mozart and contemporary travelers had to endure!

Well, we have the advantages Mozart lacked—now extended to include a handily encased small Mozartean library to thwart the tedium of our own travels and perambulations. The prestigious

Time-Life mass-sales promoters, realizing the current market potential, have just launched their first tape-only project: *The Portable Mozart*, a 16-cassette collection complete with carrying case (\$150, plus \$10 shipping). Bonuses included are a player with lightweight headphones and the Arthur Hutchings book, *Mozart: The Man, The Musician*, that was an added attraction of an earlier Time-Life (primarily LP) Mozart subscription project. As usual, the recorded performances are all reissues of commercial programs previously released—in this case under the London, Argo, and Oiseau Lyre labels, most with different couplings or as parts of sets.

All endeavors of this kind seek a mass public of young or novice listeners; *The Portable Mozart* targets those so new to cassettes that they may not even have a player. But veteran collectors of tapes, as well as of discs, have no cause to sneer and good reason to be interested. For not only are almost all the selections rewarding in themselves, but a third of them are otherwise currently unavailable (in this country at least), and some have never been, or no longer are, issued in the U.S. in any tape format.

More important, however, the present reissues are all real-time duplications on Agfa-Gevaert PE 627 chrome tape with Dolby B noise reduction, in transparent screw-type shells. Technologically, they are uniformly as fine as any cassettes available today, sounding either markedly or slightly superior to the originals (de-

pending upon their age), as I've confirmed by direct comparison with those I've treasured since they first appeared.

Helpfully informative music notes (by Frank Cooper and our own Ted Libbey), in small but not minuscule type, accompany each cassette and include texts for the one vocal work, the Requiem. Not surprisingly, recording dates are not provided, but I've dug up at least approximate release years—mostly from the '70s and late '60s, with only a few issued as early as 1960 or as recently as the '80s. But the actual age rarely can be guessed by listening: The

engineering is consistently good for its time, and the transfer editing (by Dennis Drake) is truly state-of-the-art. I encountered only one jarring sonic contrast, between the somewhat anemic Aeolian String Quintet sound in the K. 516 Quintet and Radu Lupu's ringingly solid piano tone in the succeeding K. 380 Sonata for Violin.

The account of that same String Quintet strikes me as the sole truly un-

satisfactory reading in the whole set: an unimaginatively routine approach to a supreme musical masterpiece. Elsewhere, there are a couple of instances in which I find few insights in interpretations by such stars as Herbert von Karajan, Zubin Mehta, and Georg Solti. But for the most part, empathetic interpreters prevail. And if the majority of them represent the graciousness and warmth of the Viennese School, that undoubtedly enhances the appeal of the set to newcomers to Mozart. Anyway, no purist can complain that newer schools aren't well represented by conductors Peter Maag, Neville Marriner, and Christopher Hogwood, as well as by a good many soloists.

But on to specifics . . .

Chamber Works. This is the repertory, Mozartean or otherwise, I find ideal for walkabout listening. I'd like even more of it here, but we are proffered such great longtime favorites as the Alfred Boskovsky/Vienna Octet performance of the Clarinet Quintet (c. 1960), the Vladimir Ashkenazy/London Winds reading of the K. 452 Piano Quintet (c. 1966, no longer available), the Szymon Goldberg/Lupu account of the K. 380 Violin Sonata (c. 1975), and Alicia de Larrocha's Piano Sonatas K. 282, 331, 332, and 545 (c. 1974–80). Plus first-rate Musikverein (formerly Küch) Quartet versions of the great K. 453 *Hunt* and K. 465 *Dissonant* Quartets (1980–81, never released in the U.S.). But minus, as it were, the

(Continued on page 50)



Mozart with all the fixin's: biography, tape player, music, and carrying case

(Continued from page 49)

mentioned Aeolians' G minor String Quintet (c. 1978).

Concertos. Mozart specialist Maag conducts the London Symphony in the Clarinet Concerto (with Gervase de Peyer, c. 1960) and in Horn Concertos Nos. 1 and 4 with Barry Tuckwell (c. 1960-64). The First Violin Concerto and violin/viola *Sinfonia concertante* are in my personal-favorite versions, both with the Academy of St. Martin-in-the-Fields: Iona Brown is soloist/conductor in the former (1983; the only, unacknowledged, digital recording here), and Alan Loveday and Stephen Shingles perform with Marriner in the latter (c. 1971).

The exceptionally engaging piano concerto representation is topped by an outstanding recorded performance inexplicably allowed to go out of print: the Clifford Curzon/István Kertész/LSO No. 23, K. 488 (c. 1968). The others represent an enticing range: Ashkenazy, with Kertész and the LSO in No. 9 (c. 1967, no longer available) and doubling as Philharmonia conductor in Nos. 19 and 21 (c. 1981 and c. 1967, respectively); Bernstein, as soloist and Vienna Philharmonic conductor in his favorite (and mine), No. 15 (1967); de Larrocha, with Solti and the Israel Philharmonic in No. 27 (c. 1979); and Julius Katchen, with Karl Münchinger and the Stuttgart Chamber Orchestra in No. 20 (c.

1967, no longer available).

Serenades. Rococo alfresco music is by nature ideal for walkabout listening; Mozart's delectable examples are sheer joy at any time. Time-Life Music wisely resurrects three exemplars lately unavailable: No. 7, *Haffner*, by Münchinger and the Vienna Philharmonic (c. 1961); No. 8, *Notturmo*, by Marriner and the St. Martin Academy (c. 1972); and No. 9, *Posthorn*, by Willi Boskovsky and the Vienna Mozart Society (c. 1973). But couldn't a less high-tension No. 13, *Eine kleine Nachtmusik*, be found than that by Solti and the Israel Philharmonic (c. 1960)?

Symphonies. Again, a magisterial recording gone out of print: Benjamin Britten's memorable English Chamber Orchestra account of No. 38, *Prague* (c. 1972). The three last masterpieces are in star conductors' virtuoso versions quite likely to impress a mass public: the Mehta/Israel Philharmonic traversal of No. 39 (c. 1977), the Giulini/New Philharmonia reading of No. 40 (c. 1966), and the Karajan/Vienna Philharmonic interpretation of No. 41, the *Jupiter* (c. 1964). I find richer, far more piquant rewards in the earlier works as performed by such specialists as Hogwood and Marriner: the former with his Academy of Ancient Music in No. 22 (the only period-instrument performance here; from 1979, in Vol. 3 of the complete symphony series); the latter with his St.

Martin Academy in No. 16 (c. 1968, never released in the U.S.) and in the more-Sinfonia-than-Symphony No. 26 (c. 1970, no longer available). The somewhat more romantic Austrian style is well represented by Kertész and the Vienna Philharmonic in the "Little" G minor, No. 25 (c. 1974, no longer available), while Old and New World sensibilities meld harmoniously in the Bernstein/Vienna Philharmonic account of No. 38, *Linz* (1967).

Requiem. The one vocal work included (for its *Amadeus*-fostered interest?) is the valedictory K. 626 Mass in what many consider the best-recorded Süssmayr version with Franz Beyer revisions: Marriner conducts the ASMF Chorus and Orchestra, with soloists Ileana Cotrubas, Helen Watts, Robert Tear, and John Shirley-Quirk (1977).

The whole *Portable Mozart* strikes this avowed tape and Mozart proponent as an uncommonly imaginative mass-merchandising venture: It's a potent boost for the walkabout and travel-listening vogue and a reissue anthology offering a high percentage of recorded performances of lively interest to any listener. If the primary appeal is to beginners, there is a lot, too, for longtime collectors who don't already have the originals or, more likely, who have them only on disc or in earlier versions technologically inferior to the present, high-quality cassettes. ●

NOTES FROM UNDERGROUND

More News From Britain

LONDON—Everyone hopes that the problems of budgeting for recordings in the 1980s will not slow up for long the opera program, particularly as the scope of the Compact Disc medium expands. What has surprised some listeners is the way that digital transfers of recordings 25 or more years old are coming up sounding as fresh as, if not fresher than, the latest efforts, recorded with the help of modern technology but generally with far less session time. EMI was hoping to issue a CD version of Herbert von Karajan's classic 1956 recording of Richard Strauss's *Der Rosenkavalier* with Elisabeth Schwarzkopf, Christa Ludwig, and Teresa Stich-Randall; a digital transfer was made that has now been released on LP. But contract details drawn up in 1956 made no mention of the CD medium-to-come, and a spoke—tempo-

rary, it is hoped—was put in the wheel of that project.

Klaus Tennstedt's recording for EMI of the Brahms Requiem, made last year with the London Philharmonic Orchestra and featuring Jessye Norman as one of the soloists, has now acquired its scheduled coupling, the rarely heard *Schicksalslied*. In addition, Tennstedt has recorded the *Alto Rhapsody* with Waltraud Meier as soloist.

EMI has also been pressing ahead with various series with Simon Rattle. The conductor has recorded Sibelius's First Symphony with the City of Birmingham Symphony Orchestra and Shostakovich's Tenth with the Philharmonia Orchestra. Most of EMI's recent projects with Riccardo Muti have involved the Philadelphia Orchestra. Latest works covered include

by Edward Greenfield

Scriabin's Symphony No. 1 and Berlioz's *Symphonie fantastique*.

Vladimir Ashkenazy has been busy following up on his Rachmaninoff series for Decca/London (with the Concertgebouw Orchestra) not only as conductor for the symphonic cantata *The Bells*, but as piano soloist in a new series of the concertos with Bernard Haitink conducting. EMI's sessions with Andrei Gavrilov playing Chopin (the *Ballades*) became a news story when at their completion it was announced that the pianist and his wife had applied to stay in Britain for a year instead of returning to Russia. EMI is also recording Daniel Barenboim again. As with his recent Beethoven sonata series for Deutsche Grammophon, Barenboim's projected set of the Mozart piano sonatas will be recorded in Paris. ●

Homage to Bach and Handel

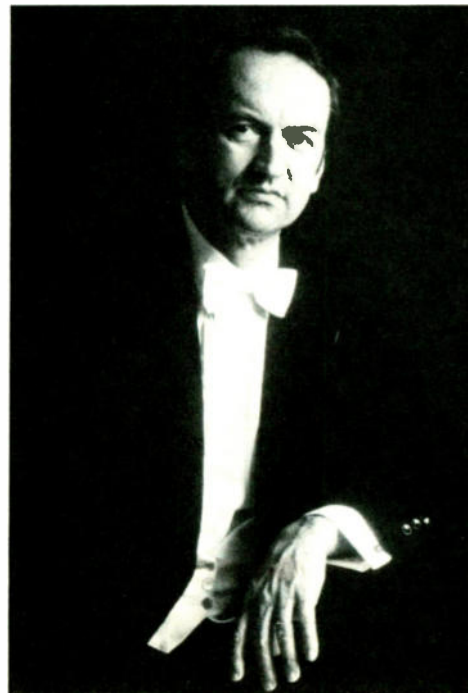
When the definitive book on the development of the early-music movement in the 20th century is finally written, doubtless it will contain several long chapters devoted to the work of the Austrian cellist Nikolaus Harnoncourt and the Dutch harpsichordist Gustav Leonhardt. There were early-music champions before these two, of course—perhaps the figure most deserving of the adjective “seminal” is the British instrument-builder, lutenist, and self-taught musicologist Arnold Dolmetsch, whose 1915 *The Interpretation of the Music of the 17th and 18th Centuries* was the first modern study, in any language, to treat in systematic fashion the matters of tempo, rhythm, and instrumentation in Baroque music.

A tradition of “authentic” performance practice, built largely on the foundations laid by Dolmetsch, was already going strong in England by the time Leonhardt and Harnoncourt were born, in 1928 and 1929, respectively. A few years later, in 1933, the continental school of early music—more rigorous in its scholarly approach and more extreme in its opinions regarding phrasing and articulation—was established at Basel, at the Schola Cantorum, cofounded by conductor Paul Sacher and cellist August Wenzinger.

Leonhardt studied at the Schola Cantorum, with Eduard Müller, from 1947 to 1950. Harnoncourt did not attend the Schola, but his first teacher was Paul Grümmer, a German cellist who often visited Switzerland and who, like Wenzinger, supplemented his cello-playing activities with authoritative performances on the viola da gamba. After leaving the Schola, Leonhardt spent several years teaching harpsichord at the Vienna Academy of Music. In 1955 he returned to

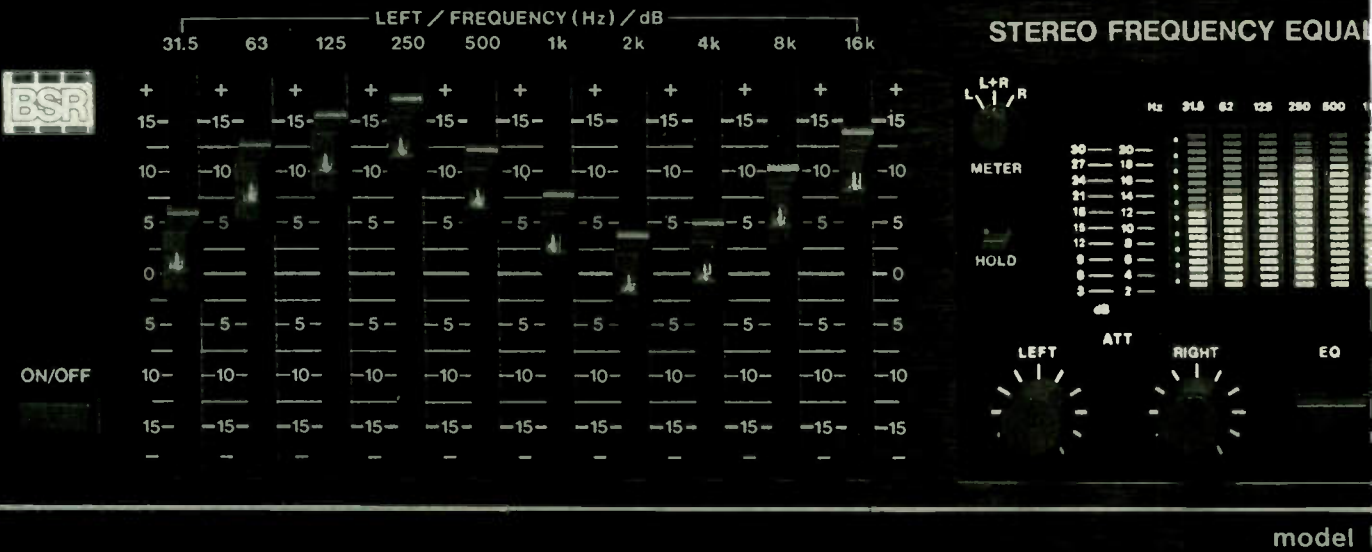
Holland, and it was in that year, in Amsterdam, that he formed the period-instrument ensemble known as the Leonhardt Consort. Harnoncourt was a student at the Academy when Leonhardt was on the faculty there; from 1952 to 1969 he held a position as cellist with the Vienna Symphony Orchestra, but he had enough energy to spare to organize, in 1953, an early-music group he called the Concentus Musicus. Leonhardt’s interests focused on the 17th- and 18th-century repertory, particularly—and naturally—on music that prominently featured keyboard instruments. In the beginning, at least, Harnoncourt’s tastes were more catholic, and when the Concentus Musicus first began concertizing, in 1957, the programs typically included works that ranged from the early Middle Ages to the High Baroque. By the early 1960s both groups were specializing, more or less, in the music of Bach, Handel, and their contemporaries; it was with this material that they launched the series called *Das Alte Werk* for the German Teldec label, and the rest, as they say, is history.

Teldec’s new 30-disc Bach and Handel edition is as much a tribute to the pioneering efforts of Leonhardt and Harnoncourt as it is to the composers, whose tricentennials are being celebrated this year. The oldest recording in the lot—and the only one that does not feature period instruments—is the set of 12 Handel organ concertos committed to vinyl by Karl Richter in 1959. The supporting ensemble is not identified, but one might assume that it is one of the original versions of the Munich Bach Orchestra, which Richter founded shortly after his 1956 appointment as professor at the Hochschule für Musik in that city and with which he embarked, in



Concentus founder Harnoncourt

1961, on a long relationship with Deutsche Grammophon’s Archiv series. There is an extraordinary difference between the sound of the orchestra heard on the Richter recording and that of the one accompanying Leonhardt on the next oldest selection, a 1962 version of Bach’s Harpsichord Concerto in D, B.W.V. 1054. It has to do with more than just pitch level, timbre, and sonic weight; the five members of the Leonhardt Consort play on original or restored 17th- and 18th-century instruments, tuned almost a half step below “modern” pitch, with gut strings and with bows considerably shorter than those used by their more numerous Munich counterparts. One finds in the Leonhardt recording some of the first recorded signs of the deliberately abbreviated phrases, gently-swelled sustained notes, “sighing” dactyl figures, and other niceties that during the next decade would become equated with “authenticity” in Baroque music performance. By 1967, the date of the earliest recordings (of the Bach orchestral suites) by which Harnoncourt is represented here, the vision of Baroque music shared by Leonhardt and Harnoncourt had evolved, in essence, to its present state. It is a performance style not to everyone’s taste: The French surgeon and amateur music-critic Gerard Zwang, in his 1977 book *À Contre-bruit*, called Leonhardt and Harnoncourt “polluters of the musical



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By Drew Kaplan

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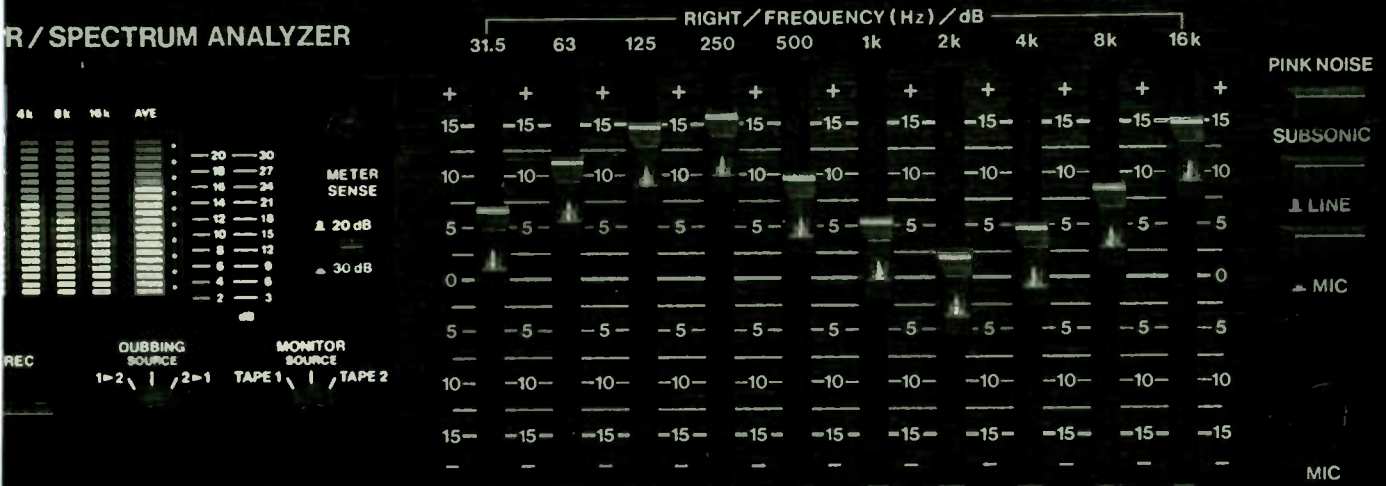
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environment, the posthumous assassins of Bach, Couperin, Frescobaldi, and other innocent dead"; modified versions of that opinion are held by many music-lovers today. The fact remains, though, that the Leonhardt-Harnoncourt approach was the one taken by most of the professional early-music ensembles that sprang up in the 1970s, and its wide-reaching influence was due largely to the vintage recordings that are sampled in the Teldec Bach/Handel special edition.

Not all of the discs contain old material. The various cantata performances range from 1971 (*Christ lag in Todesbanden*, B.W.V. 4, performed by the Concentus Musicus) to 1984 (*Ein Herz, das seinen Jesum lebend weiss*, B.W.V. 134, and *Ich freue mich in dir*, B.W.V. 133, performed by the Leonhardt Consort). The superbly engineered set devoted to the Bach violin concertos is a 1982 product, and most of the Handel concerto grosso recordings date from either 1981 or 1983.

The details of phrasing and articulation described above—some would call them

"mannerisms"—have grown somewhat more exaggerated over the years, and tempos in the slower movements seem to have picked up a bit. (Clock watchers might find it of interest to compare Harnoncourt's 1969 *Brandenburg Concertos*, included in the Teldec anthology, with his altogether more brisk 1981–82 reappraisal of the same pieces, on Teldec T 42823 LP and T 42840 LP.) Harnoncourt's and Leonhardt's basic attitude toward Bach and Handel, however, remains unchanged—these are performances guided not only by scholarship, but also by uncompromising dedication and consistently vigorous musicianship.

Recordings in Teldec's *Das Alte Werk* series, new and old, have been admirable not just for their sonic and musical excellence but also for their thorough, often thought-provoking liner-note essays. It is only in this latter department that the collection of Bach and Handel reissues falls short. Most of the players and their instruments are cited on the outside jacket covers, but the centerfold of each album offers nothing more than a

photograph or two and a generic biographical blurb on the composer. All of the discs benefit from Teldec's Direct Metal Mastering process, and the pressings are of a high quality. *James Wierzbicki*

ZEMLINSKY:

Der Zwerg, Op. 17.

⊙ Nielsen, Haldas, Weller, Riegel; RIAS Chamber Choir, Berlin Radio Symphony Orchestra, Albrecht. Schwann VMS 1626 (D, 2). Ⓢ 11626 (2). (Distributed by German News Co., 220 E. 86th St., New York, N.Y. 10028.)

ZEMLINSKY:

Eine florentinische Tragödie, Op. 16.

⊙ Riegel, Sarabia, Soffel; Berlin Radio Symphony Orchestra, Albrecht. Schwann VMS 1625 (D). Ⓢ 11625. (Distributed by German News Co.)

When Alexander von Zemlinsky passed away after a painful illness on March 15, 1942, in Larchmont, N.Y., his death went completely unnoticed. Three years before, having fled first from Berlin and then from Nazified Vienna, he had arrived in the United States a sick and broken man and had taken to his bed almost immediately.

T E L D E C ' S S P E C I A L E D I T I O N

All recordings reviewed from LP.

BACH

The Art of Fugue, B.W.V. 1080.

Tachezi. ⊙ Teldec T 48231 LP (2). ⊕ (2). (Distributed by Intersound.)

St. John Passion, B.W.V. 245.

Equiluz, Van Egmond, Villisech, Van t'Hoff, Schneeweis; Concentus Musicus, Chorus Viennensis, Vienna Choir Boys, Harnoncourt. ⊙ Teldec T 48232 LP (2). ⊕ (2).

Mass in B minor, B.W.V. 232.

Hansmann, Lliyama, Watts, Equiluz, Van Egmond; Concentus Musicus, Chorus Viennensis, Vienna Choir Boys, Harnoncourt. ⊙ Teldec T 48233 LP (2). ⊕ (2).

Christmas Cantatas, B.W.V. 57*, 63*, 110*, and 1331.

Jelosits, Wiedl, Frangoulis, Hennig, Stumpf, Esswood, Jacobs, Equiluz, Van Egmond, Van der Meer, Lorenz; Tölz Boy Choir*, Concentus Musicus*, Harnoncourt*. Collegium Vocalef, Hannover Boy Choirf, Leonhardt Consortf, Leonhardtff. ⊙ Teldec T 48234 LP (2). ⊕ (2).

Selig ist der Mann; Christen, ätzet diesen Tag; Unser Mund sei voll Lachens; Ich freue mich in dir.

Easter Cantatas, B.W.V. 4*, 6*, 31*, 661, and 1341.

Esswood, Equiluz, Van Egmond, Nimsger, Hennig, Jacobs, Van Altena; Chorus Viennensis*, Vienna Choir Boys*, Concentus Musicus*, Harnoncourt*. Collegium Vocalef, Hannover Boy Choirf, Leonhardt Consortf, Leonhardtff. ⊙ Teldec T 48235 LP (2). ⊕ (2).

Christ lag in Todesbanden; Bleib bei uns, denn es will Abend werden; Der Himmel lacht! die Erde jubiliert; Erfreut euch, ihr Herzen; Ein Herz, das seinen Jesum lebend weiss.

Cantatas for the City Council Election, B.W.V. 29, 71, 119, 120, and 137.

Huber, Wiedl, Bergius, Esswood, Visser, Equiluz, Hartinger, Holl, Huttenlocher, Van Egmond; Vienna Choir Boys, Tölz Boy Choir, Concentus Musicus, Harnoncourt. ⊙ Teldec T 48236 LP (2). ⊕ (2).

Wir danken dir, Gott, wir danken dir; Gott ist mein König; Preise, Jerusalem, dem Herrn; Gott, man lobet dich in der Stille; Loebe den Herren, den mächtigen König der Ehren.

Brandenburg Concertos, B.W.V. 1046–51.

Concentus Musicus, Harnoncourt. ⊙ Teldec T 48237 LP (2). ⊕ (2).

Orchestral Suites, B.W.V. 1066–69.

Concentus Musicus, Harnoncourt. ⊙ Teldec T 48238 LP (2). ⊕ (2).

Concertos for Harpsichord and Orchestra, B.W.V. 1053–56, 1060, and 1062–64.

Leonhardt Consort, Leonhardt. ⊙ Teldec T 48239 LP (2). ⊕ (2).

Concertos.

A. Harnoncourt, Schaefflein*; Concentus Musicus, Harnoncourt. ⊙ Teldec T 48240 LP (2). ⊕ (2).

Concertos for Violin and Orchestra, B.W.V. 1041–43; Concerto for Violin, Oboe, and Orchestra, B.W.V. 1016*; Concerto for Violin and Orchestra (from Harpsichord Concertos), B.W.V. 1052 and 1056.

HANDEL

Concertos for Organ and Chamber Orchestra, Opp. 4 and 7.

Chamber Orchestra, Richter. ⊙ Teldec T 48221 LP (2). ⊕ (2).

Sonatas.

Brüggen*†, Bylsma*, Leonhardt*, Schaefflein†, A. Harnoncourt†, Pfeiffer†, N. Harnoncourt†, Tachezi. ⊙ Teldec T 48222 LP (2). ⊕ (2).

Sonatas for Recorder and Continuo: Op. 1, Nos. 2, 4, 7, and 11*; in B flat*; in D minor*; Sonatas for Flute, Violin, and Continuo: Op. 2, Nos. 1b, 3, and 5†; Sonata for Oboe, Violin, and Continuo, in D minor†; Sonata à 3, in F†.

Alexander's Feast.

Palmer, Rolf-Johnson, Roberts; Stockholm Bach Choir, Concentus Musicus, Harnoncourt. ⊙ Teldec T 48223 LP (2). ⊕ (2).

Water Music; Concerti grossi, Op. 3, Nos. 1–3, 4a, 5, and 6.

Concentus Musicus, Harnoncourt. ⊙ Teldec T 48224 LP (2). ⊕ (2).

Concertos.

Tachezi, Stastny, Schaefflein; Concentus Musicus, Harnoncourt. ⊙ Teldec T 48225 LP (2). ⊕ (2).

Concerti Grossi for Strings and Continuo, in C minor, F, D minor, A, and B minor, Op. 6, Nos. 8–12; Concerto for Organ and Orchestra, in F; Concerto for Flute and Orchestra, in D minor; Concerto for Oboe and Orchestra, in G minor; Concerto Grosso in F, Op. 3, No. 4b.

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Placido Domingo
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Arthur Rubinstein
1976

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Twenty years earlier, he had been one of Europe's most celebrated conductors and composers. In 1949, his brother-in-law and junior by two years, Arnold Schoenberg, expressed confidence in Zemlinsky's greatness as a composer, adding that his revival might occur sooner than most people believed. In fact, it only started in the late Seventies, but it has been making steady progress ever since. We have gradually come to realize that even though it was an ordeal to be "squeezed" between two giants, Mahler and Schoenberg, both of whom he worshipped, Zemlinsky was a major figure after all. His discography reflects the stages of his renaissance fairly adequately.

It all started with the masterly *Lyric Symphony* (1923), based on poems by Rabindranath Tagore, a worthy counterpart to Mahler's *Song of the Earth* and a cardinal source of inspiration for Alban Berg's *Lyric Suite*. Three recordings are now available of the *Lyric Symphony*. Then, starting with the monumental Second, came the four string quartets, followed by the orchestral *Maeterlinck Songs*; thus, all of Zemlinsky's major works outside the theater have become available.

However, Zemlinsky was first and foremost an operatic composer. He completed no less than seven operas, leaving an eighth finished but partly unscored. Of these, the most celebrated in their day and probably the best

are the fifth and sixth, both after plays by Oscar Wilde, which are now being issued almost simultaneously in similar productions on the German Schwann label. *A Florentine Tragedy* was staged at La Fenice in 1980, and a recording made on that occasion was issued a few years ago by Fonit Cetra. *The Birthday of the Infanta* receives its world premiere recording in the present release. The two operas are rather short and add up to a perfect double bill, the *Florentine Tragedy* preferably coming second, even though it was written first (in 1916, *The Birthday of the Infanta* following in 1921). Alongside the earlier *Maeterlinck Songs* and Second Quartet and the slightly later *Lyric Symphony*, the two operas belong to the period between 1911 and 1927, when Zemlinsky, then at the height of his powers and fame, was first conductor at the German opera house in Prague.

Zemlinsky was a strange, shadowy figure, obsessed by physical ugliness and amorous failure. Alma Mahler, to whom he taught music and whom he wooed before her marriage, ruthlessly described him as a hideous gnome, "undersized, chinless, toothless." Only on the conductor's rostrum was he transfigured. No wonder the two Wilde plays inspired him to write what lay closest to his heart. In *A Florentine Tragedy*, an outraged husband, the aging and ugly merchant Simone, unexpectedly reconquers his wife at the last minute by killing his rival, the young and handsome Prince, in a burst of desperate courage—making the piece end abruptly on a very hazardous *coup de théâtre*. The story behind the other opera is that of a dwarf: He is an adolescent, almost a child, the son of a poor collier. He is found in the forest, where he had led a happy life, for no one had ever told him about his deformity and he had never seen his image. The Infanta of Spain, to whom he has been presented as a toy on her birthday, plays with him a most inhuman game, without her even being aware of her cruelty. Madly in love with the Infanta, the Dwarf suddenly has the horrible revelation of his ugliness in front of the first mirror he ever looks into. As the pain kills him, she merely remarks, "Next time, I want a toy without a heart," before returning to her playmates.

Musically, the two works are fairly different. *A Florentine Tragedy* has an almost Straussian splendor and opulence, and indeed its lengthy orchestral prelude (replacing the original love duet missing in what re-

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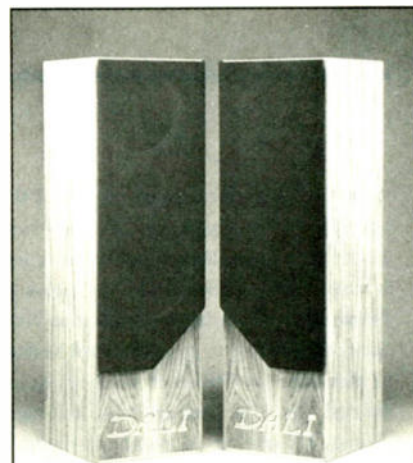
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- (A) analog original
- (D) digital original

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mains of Wilde's manuscript) may recall the opening of *Der Rosenkavalier*. However, Zemlinsky's tonal idiom is darker, more tormented, closer to Schoenberg's *Pelléas et Mélisande*. This, in fact, was as far as Zemlinsky was willing to go on the road leading to atonality, the border of which he never crossed. His vocal lines are tense and high-strung, his scoring of matchless magnificence. As a powerful one-act opera with only three characters, *A Florentine Tragedy* should henceforth attain a popularity comparable to that of Bartók's *Bluebeard's Castle*.

The Dwarf is at the same time longer, more varied, and more complex. Here the composer confronts two irreconcilable worlds: The frozen formal etiquette of the Spanish court is represented through a decorative, archaic, stylized diatonicism of sometimes almost Ravelian preciousness, while the sufferings of the Dwarf call for a tortured chromaticism of truly expressionistic aching. Just as in *A Florentine Tragedy*, where a tremendous tension gathers very slowly, to burst out in a protracted climax of terrifying violence, here the icy, crystalline serenity is purposely drawn out so that the moment of the terrible revelation becomes one of the most heartrending, shocking scenes in the operatic repertoire. Alban Berg, who greatly admired the work, was unable to bear it.

I have so far spoken of *The Dwarf*, which is the original title of Zemlinsky's opera, whereas the present recording calls it *The Birthday of the Infanta*, thus reverting to Oscar Wilde's title. (Incidentally, the latter title is also that of Franz Schreker's earlier ballet-pantomime, of which an orchestral suite has been recorded on the Classical Excellence label). The explanation for the

change is that for its recent revival the opera's libretto has been thoroughly revised to suit contemporary taste and get closer to Wilde's original. The music, however, remains absolutely the same. As for *A Florentine Tragedy*, compared with the recorded live performance on Fonit Cetra, the Schwann recording features a couple of (very minor) cuts that improve its dramatic pace and emphasize Simone's already dominating part.

Both works get magnificent performances. Kenneth Riegel embodies a Dwarf of shattering, almost shocking intensity. This part finds him at his best as a great singer and an actor of genius, and his grand climax, when he sees himself in the mirror, is simply spine-chilling. Inga Nielsen is a perfect Infanta, with her Nordic, crystal-clear and icy soprano embodying a porcelain-eyed child-woman, an unknowing and murderous doll. Béatrice Haldas's warmer and more sensuous tone color suits the compassionate, sympathetic Ghita. In *A Florentine Tragedy*, we again find Kenneth Riegel, this time embodying a confident, even rather arrogant young Renaissance prince, but here the honors undoubtedly should go to the formidable bass of Guillermo Sarabia (a newcomer to me; the jacket gives no biography), who sings a really overwhelming Simone. Quite rightly, there is more sexual submission of the animal kind than actual love in Doris Soffel's final *volte-face*, the more so since only a few minutes before she harshly encouraged her lover to slaughter her husband.

In both productions, made at the same time, the orchestral playing and the conducting of Gerd Albrecht are magnificent, and so is the recorded sound. As to the actual fin-

ished product, I have two small reservations: One concerns both works, and that is the libretto, where the English translation follows the German original rather than facing it line-by-line in the usual fashion, a most unfortunate and impractical proposition; the other applies to *The Birthday of the Infanta*, whose 78 minutes make rather short listening for being spread out on four record sides. Surely a suitable complement (such as Schreker's eponymous ballet) could have been found. This being said, we now have two major contributions to the Zemlinsky revival. Schoenberg was right about him after all!

Harry Halbreich

GIORDANO:

Andrea Chénier.

● Pavarotti, Caballé, Nucci, Kuhlmann, Varnay, Ludwig, Krause, Cuenod, Howlett, Tadeo, De Palma, Andreoli, Morresi, Hamer; Chorus of the Welsh National Opera, National Philharmonic Orchestra, Chailly. Ray Minshull, prod. London 410 117-2 (D, 2). Ⓞ (3). ☐ (2).

This is an exciting performance, one of the few Italian opera recordings made in recent years that I find anywhere near convincing. Yes, it has problems. They begin with our prima donna, who at her very first entrance swoons through an overripe portamento, characteristic of her, but not of the virginal young victim of the French Revolution she's supposed to play; she couldn't do more to destroy her character if, in live performance, she were preceded on stage by a footman announcing, "Miss Montserrat Caballé." Her partner, Luciano Pavarotti, also sounds distant from the drama, as if—despite a struggle to rescue his artistic integrity from his career as an entertainer—he'd forgotten what makes one Italian tenor role different

I N T H I S I S S U E

BACH:
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GESUALDO:
Il quinto libro dei madrigali a
cinque voci.

GIORDANO:
Andrea Chénier.

HANDEL:
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Concertos; Royal Fireworks
Music.

HANDEL:
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HAYDN:
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IVES:
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Set No. 2.


MONTEVERDI:
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MOZART:
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ZEMLINSKY:
Der Zwerg; Ein florentinische
Tragödie.

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from another. But he *has* recovered his vocal freedom, and I'm both grateful and impressed: His singing here is ringing, reasonably supple, and no more than a tiny bit cynical, worlds away, in any case, from the distressingly heavy labor of the three excerpts from *Chénier* he recorded in 1979 on his *Verismo Arias* disc. Caballé, I'm afraid, seems to be sinking into vocal difficulty, most noticeably in the final duet, where at moments she sounds almost desperate. But she pulls herself together often enough, above all for "*La mamma morta*," her big aria (much as she did for "*Suicido*" on an otherwise generally unconvincing London recording of *La Gioconda* a few years ago). At these moments she's her usual powerful, voluptuous self; her performance is hardly a total loss.

Why do I like the recording so much if I have doubts about the soprano and tenor? Because in my no doubt revisionist view of this much underrated opera, the soprano and tenor aren't so important. Yes, their doomed love is the thread that holds the work together. But even so, it's only one of a series of historical vignettes that together make up the full story of the opera, and as set to music, it's a sometime thing, empty rhetoric brightened, here and there, by a flash of honest passion. It's in sketching what might appear to be the background of his main story that Giordano shows himself to be a master

of post-Wagnerian half-symphonic operatic continuity; it's in his parade of incidents from the daily life of revolutionary France that he demonstrates an opera composer's real skill, which is to embed theatrical action in music that gives it color, shape, and—above all—character.

I like this recording because the background parade is so savory. Look, for instance, at the casting of the smaller roles. The subtlest comprimario of our time, Piero de Palma, is the spy, *Incredibile*, and four other parts are taken by singers all of whom are stars in their own right. Tough old Astrid Varnay is Caballé's mother, the Countess de Coigny; Tom Krause is Pavarotti's friend, Roucher; the masterful Hugues Cuenod, who must be eighty, is (to quote the libretto) the "ageing" novelist, Fléville; and Christa Ludwig enjoys a brief moment of sober glory as the patriotic Madelon. Christa Ludwig! Next some theater group will stage *Romeo and Juliet* with Sophia Loren as the Nurse. As Gérard, head honcho of the opera's revolutionary backdrop, Leo Nucci is . . . well, not subtle, exactly, but full of life, wielding his incisive (though not very colorful) instrument with an abandon that reminds me of that 200-horsepower baritone of a generation ago, Gino Bechi—scaled down, of course, to our modern-age 55-mile-an-hour speed limit.

Add vivid conducting by Riccardo Chail-

ly and you've got a winner, especially since Chailly can both crack his whip—try him at the climax of the second act, when Pavarotti fights Gérard—and then hold the orchestra in breathless suspension when, at the end of "*La mamma morta*," Caballé asks us to imagine that she's being kissed by the angel of death. Chailly is the real hero of the performance; it's principally because he approaches the score with such responsibility and dramatic force that I find myself convinced.

I mentioned Gino Bechi. Bechi actually recorded *Chénier*, in 1941, with the impassioned tenor Beniamino Gigli and other artists from La Scala. My own sense of responsibility impels me to say that this old recording sets a standard for color, odor, and flavor (to say nothing of vocal force) so high that there isn't any point in even asking if the new one measures up. Perhaps I shouldn't compare them; it's as if I'd insist on spoiling my enjoyment of a sleek new restaurant in Rome with memories of a tiny trattoria where food still tastes as fresh as it once did all over Italy. But the trattoria does exist, and so does the old recording of *Chénier* (it's still available as an import), serving, I'm afraid, as a rebuke to anyone who thinks even the best modern Italian opera performances are truly adequate.

Gregory Sandow

(Continued on page 61)

C R I T I C S ' C H O I C E

The most noteworthy releases reviewed recently

BACH:

Works for Harpsicord.
Gilbert, Pinnock. © Archiv 413 103-1, June.

BARTÓK:

String Quartets, Nos. 1-6.
Takács String Quartet. © Hungaroton SLPD 12502-04, May.

CHABRIER:

L'Étoile.
Gautier, Bacquier, Le Roux, David, Alliot-Lugaz, Raphanel, Damonte; Orchestra and Chorus of the Opera of Lyons, Gardiner. © Pathé Marconi 2700863, July.

FALLA:

El Corregidor y la Molinera.
Berganza; Lausanne Chamber Orchestra, López-Cobos. © Claves D 8405, May.

MENDELSSOHN:

Concerto for Violin and Orchestra; Overtures: "Ruy Blas"; "A Midsummer Night's Dream"; "The Hebrides."
Silverstein; Utah Symphony Orchestra, Silverstein. © Pro Arte PAD 187, May.

MUSSORGSKY:

Boris Godunov.
Various artists; U.S.S.R. TV and Radio Large Symphony Orchestra and Chorus, Fedoseyev. © Philips 412 281-1, May.

PAGANINI:

Works for Violin and Orchestra.
Accardo; Chamber Orchestra of Europe, Tamponi. © EMI Angel DS 38127, 38128, June.

SCHOENBERG:

Vocal and Instrumental Works.
Various artists; BBC Symphony Orchestra and Chorus, Ensemble Intercontemporain, Boulez. © CBS Masterworks 13M 37863, June.

STRAVINSKY:

"The Firebird" Suite.

TCHAIKOVSKY:

"The Nutcracker" Suite.
Achatz. © BIS LP 238, July.

LONDON SYMPHONY ORCHESTRA:

Orchestral Works.
Gould. © Varèse Sarabande VCD 47209, July.

TREVOR PINNOCK:


Baroque Keyboard Works.
Pinnock. © Archiv 413 591-1, May.



A bit of Mozartean magic: Gardiner

MOZART:

**Concertos for Piano and Orchestra:
No. 12, in A, K. 414; No. 14, in E flat,
K. 449.**

 *Bilson; English Baroque Soloists, Gardiner.
Andreas Holschneider, prod. Archiv 413 463-
4 (D).* ©

Fortepianist Malcolm Bilson's fans, particularly those who relished the first release in his Mozart piano concerto series with John Eliot Gardiner (Nos. 9 and 11, Archiv 410 905), won't need my recommendation to obtain this second installment. It couples another relatively early concerto, No. 12, with what is generally considered to be the first of the incomparably great works in this form, No. 14.

There have been so many fine modern-instrument recordings of both works by famous soloists and conductors that even such rising but more specialized stars as Bilson and Gardiner might seem to be out-classed—unless one is aware of the profoundly different musical experiences proffered by the strange (at first) period-instrument timbres, less pretentious chamber-scaled manner, and the quintessentially Mozartean magic to be savored here. Compare these versions with, for example, the impressive 1982 Rudolf Serkin/Claudio Abbado/Deutsche Grammophon Twelfth Concerto or the bewitching c. 1975 Fourteenth by Peter Serkin and Alexander Schneider for RCA (recently reissued at Gold Label budget price). But these aren't true comparisons: The sonic and stylistic differences are of kind, not quality. And it doesn't diminish one whit my admiration of the younger Serkin's delectable No. 14 to find another kind of delectability in Bilson's. Wanda Landowska was thinking of performances as well as compositions when she reminded us that "masterpieces are not wolves and do not devour each other." In music, as in heaven, there are many mansions. *R. D. Darrell*

(Continued on page 62)

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Distinctive "Water Music" from Hans-Martin Linde and the Linde Consort

IVES:

Symphony No. 3; Orchestral Set No. 2.

Ⓞ Concertgebouw Orchestra, Thomas. David Mottley, prod. CBS IM 37823 (D). Ⓞ

The manuscripts, letters, and documents comprising the Ives collection at Yale University have proved to be an invaluable source for Ives scholars. In 1974, the Charles Ives Society was founded to produce critical editions of the composer's works based on the contents of the collection. Two of the fruits of the society's labors may be heard on the present recording: the premiere performances of Symphony No. 3 and Orchestral Set No. 2, in their new, definitive guises.

Symphony No. 3 (1902-4) has endured a series of alterations during its 80-year existence. First revised by the composer in 1909, it was further corrected by Lou Harrison (who prepared the first printed score) and Henry Cowell (who thoroughly amended the existing edition in 1964). Now, with the added materials from the Ives Collection, an even more accurate reading may be achieved. Most of the alterations consist of subtle changes in instrumentation (such as the haunting violin solos at the end of the first two movements). The symphony has undoubtedly gained in clarity and conviction as a result.

This is one of the composer's most accessible works, partaking of a coherent, organic nature sometimes lacking in later efforts. The typical Ivesian unresolved discords and liberal quoting of hymns and folk tunes are apparent, but they are carefully juxtaposed rather than savagely layered. A gentle, earnest, unassuming piece, of chamber orchestra proportions, the symphony is a gem of melodic and formal perfection.

Orchestral Set No. 2 (1909-15) is hardly known at all today; it has never been published (though the Ives Society will correct this), and prior performances have been based on a score made in the 1930s by one of Ives's copyists. Its idiom is closer to the Ives we know from *Three Places in New England* and Symphony No. 4. Here are the true Ivesian layerings of Americana, ranging from hymns and folksongs to snatches of band and dance hall music. The resulting contrapuntal web is a dense blend of clashing polyrhythmic and polytonal patterns. An eerie, ominous Elegy is followed by a boisterous, exuberant Allegro ("The Rockstrewn Hills Join in the People's Outdoor Meeting"). The last movement ("From Hanover Square North, at the End of a Tragic Day, the Voice of the People Again Arose"), inspired by the sinking of the *Lusitania*, builds a moving choral/orchestral climax that features "In the Sweet Bye and Bye" blaring in the brass.

Michael Tilson Thomas and the Concertgebouw Orchestra produce readings of penetrating intelligence. The Concertgebouw plays this music with enthusiasm and even idiomatic flair, though its lush, polished sound drains the scrappier, more boisterous moments of their rudeness. Rarely have I heard Ives played with such lucidity of vision; instead of the incoherent jumble that so often passes for Ivesian performance, one is treated to readings that constantly clarify the intertwining musical lines and bring out the inner voices. Dennis Russell Davies's recent recording of the unrevised Symphony No. 3 (Pro Arte PAD 149) with the much smaller St. Paul Chamber Orchestra can evince greater rhythmic definition, brisker textures, and more raucous effects, but it is

no match for Thomas in either sonority or musical intellect. *K. Robert Schwarz*

HANDEL:

Water Music.

Ⓞ Linde Consort, Linde. Gerd Berg and Christfried Bickenbach, prods. Angel EMI 4DS 38154 (D). Ⓞ

HANDEL:

Concerto in F; Concerto a due cori, No. 2, in F; Royal Fireworks Music.

Ⓞ Cappella Coloniensis, Linde. Angel EMI 4DS 38155 (D). Ⓞ

The Swiss Hans-Martin Linde has been long esteemed as a Baroque flutist and recorder player: It's only recently that he has followed the examples of fellow recorder virtuosos Frans Brügghen and the late David Munrow as a leader of period-instrument ensembles. And while his most recently recorded solo program (with Christopher Hogwood accompanying) of Handel's *Blockflöte Sonatas* for Angel should have prepared me, I'm still surprised and delighted by the personality, humor, idiomatic authority, and above all the freely rhapsodic ornamentation he brings to (and elicits from his players throughout) the familiar Handel masterpieces—except that they no longer seem so familiar in these imaginatively fresh and irresistibly infectious performances.

Add gleamingly lucid digital sound to the attractions here and even the best and most famous previous *Water Music* and *Royal Fireworks Music* recordings begin to seem diminished. I still cherish my earlier favorite *Water Music* by Harmoncourt for Telefunken, but while its best moments are still mightily exciting, its idiosyncrasies, not to say eccentricities, seem all the more marked and controversial in comparison with Linde's saner, less frenzied treatment. Even the great Hogwood is made to seem for once almost cursory, and such worthies as Gardiner, Maier (with the Collegium Aureum), Malgoire (in both his c. 1974 and 1984 versions), and Pincock begin to fade in my memory. (I mention only complete, period-instrument *Water Musics*; no excerpts-only recordings can ever satisfy true Handelians, and once one has developed a taste for authentic timbres and styles, modern sonorities and symphonic inflations simply sound all wrong.)

The Linde Consort sounds like a smaller ensemble than I've ever heard perform the *Water Music*. (I say *sounds*, since the pres-

ent cassette's skimpy notes don't include any personnel or instrument specifications.) But while the most famous royal-barge presentation of this music in 1717 probably did muster some 50 players (with doubled winds), scholars believe that there was at least one earlier, more modest Thames expedition, perhaps as early as 1715. What was played then probably was only the present "Horn" Suite in F. Trumpets and timpani weren't added—they are featured in the present Second, or "Trumpet," Suite in D—until the 1717 trip. And the present Third, or "Flute," Suite in G, more lightly scored with harpsichord continuo, probably was played only in the evening after the return to land.

Whatever the historical facts, Linde's relatively small-scaled, lean yet muscular presentation completely justifies itself—first by felicitously combining consistently taut control with wholly unfettered freedom for the individual soloists (notably, the solo oboist's wealth of always musically apt embellishments in the *Adagio e staccato*), but also by enlivening stylistic traditions with distinctive projections of personality (not ex-

cluding genuine humor) by both the soloists and the leader. Moreover, the pungent Baroque timbres are seemingly effortlessly produced and varied, while Linde and his band never forget that the original purpose of this music was immediate entertainment: an inexhaustible fount of whistleable tunes and toe-tickling rhythms. What other music radiates such buoyancy and such a pervasive sense of elation?

For the more festive *Royal Fireworks Music* and the two orchestral concertos, Linde calls upon an apparently slightly larger ensemble, the Cappella Coloniensis (i.e., Chamber Orchestra of Cologne), but except for the greater stateliness of the overture movements, the performances otherwise are every bit as crisply characterized and contagiously zestful as those of the *Water Music*.

The two less-often-heard concertos are of special interest—to listeners in general as gloriously satisfying music in their own right and to Handel cognoscenti for their revelatory glimpses into the canny Old Master's workshop. The shorter, two-movement Concerto in F (No. 1 of the three concertos

that served as preparatory exercises for the *Fireworks* and *Water Music*) comprises preliminary versions of the allegro from the *Fireworks* Overture and the first of the final two Menuets. The six-movement Second Concerto *a due cori* combines some original materials with transcriptions of choral movements from *Esther*, *Messiah*, *Ode for the Birthday of Queen Anne*, and the *Occasional Oratorio*. Both concertos have been recorded before, usually as fillers, less often as parts of complete trilogies, but they have never been as sonically and musically attractive as here. And for the first time (as far as I know) in recorded presentations, they are identified by the new Handel Works Catalogue numbers: 333 for the Double Concerto in F, 335b for the two-movement Concerto in F (superseding the old Chrysander/Händel identifications by volume and page).

What better way to celebrate George Frideric's 300th birthday year than with this music? Nearly three centuries old though it may be, it has never sounded younger, more invigorating, or more vital. *R. D. Darrell*

(Continued on page 64)

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Identify this pop singer, her age, and the TV show she's debuting on.

**Fifty questions
to separate the
leaders from
the pack**

Let's Get Trivial

*by Billy Altman
and Jeff Nesin*

Think of this as a populist update of *The G.E. College Bowl*—highly entertaining, mildly intelligent, and entirely irrelevant. So whether your degree is from MIT, UCLA, or WPLJ, here's an opportunity to unburden yourself of some of those useless rock 'n' roll facts you've been carrying around. "WPLJ," by the way, was originally a modest hit in the '50s for the 4 Duces and was revised by the Mothers of Invention a decade and a half later. The letters stand for White Port and Lemon Juice. You get the idea. . . .

Billy Altman is New York editor and video columnist for Creem. Jeff Nesin writes frequently about music and is director of special programs at New York's School of Visual Arts.

1. Which Everly Brother is older? (a) Don (b) Phil (c) neither—they're twins
2. Who produced records for both Joni Mitchell and Jackson Browne? (a) Crosby (b) Stills (c) Nash (d) Young

Match the lead singer with the group:

- | | |
|--------------------|-------------|
| 3. Levi Stubbs | Impressions |
| 4. Curtis Mayfield | Drifters |
| 5. Martha Reeves | Four Tops |
| 6. David Ruffin | Vandellas |
| 7. Ben E. King | Temptations |
8. Cyndi Lauper first recorded with (a) Blue Ash (b) Blue Angel (c) Blue Swede (d) The Shocking Blue.

9. Chuck Berry is a licensed (a) justice of the peace (b) auto mechanic (c) cosmetologist (d) chiropractor.
10. Steve Miller's brother Jerry played guitar for which California psychedelic band? (a) Strawberry Alarm Clock (b) Chocolate Watch Band (c) Peanut Butter Conspiracy (d) Moby Grape
11. When Brian Wilson stopped touring with the Beach Boys in 1964, who first took his place on stage? (a) Glen Campbell (b) Mac Davis (c) John Denver (d) John Davidson
12. What band did Lowell George leave to form Little Feat?
13. Which Rolling Stones session keyboardist was actually once a member of the band? (a) Ian McLagan (b) Ian Paice (c) Ian Stewart (d) Ian Whitcomb
14. Bob Dylan once recorded under the alias (a) Queen Jane (b) Blind Boy Grunt (c) Judas Priest (d) Mr. Jones.
15. Name the three original Wailers.
16. Which guitarist did not play for the Yardbirds? (a) Peter Green (b) Jeff Beck (c) Eric Clapton (d) Jimmy Page
17. Which guitarist did not play for John Mayall's Bluesbreakers? (a) Peter Green (b) Jeff Beck (c) Eric Clapton (d) Mick Taylor

Match the "bird group" with their hit:

- | | |
|---------------|----------------------------|
| 18. Orioles | "Gee" |
| 19. Flamingos | "Earth Angel" |
| 20. Penguins | "I Only Have Eyes for You" |
| 21. Crows | "Riot in Cell Block #9" |
| 22. Robins | "Crying in the Chapel" |
23. The working title of the Beatles' film *Help!* was (a) *Carry On, Doctor Robert* (b) *Eight Arms to Hold You* (c) *Four Clean Young Men* (d) *You Know My Name (Look Up the Number)*.
24. What does "ABBA" stand for?
25. Who were Nedra Talley, Veronica Bennett, and Estelle Bennett? (a) Royalties (b) Ronettes (c) Marvelettes (d) Bobettes
26. Which future soul star replaced Clyde McPhatter in the Dominoes?
27. Which member of ZZ Top does not have a beard? (a) Billy Gibbons (b) Dusty Hill (c) Frank Beard (d) none of the above
28. Which title is not the name of a Ramones song? (a) "Gimme Gimme Shock Treatment" (b) "Psycho Therapy" (c) "Go Mental" (d) "D.O.A."
29. The kids from which TV show had hits with "Johnny Angel" and "My Dad"? (a) *My Three Sons* (b) *Father Knows Best* (c) *The Donna Reed Show* (d) *Ozzie and Harriet*

30. David Bowie made his acting debut in the film (a) *Ned Kelly* (b) *The Man Who Fell to Earth* (c) *How I Won the War* (d) *Cisco Pike*.
31. Why did Gene Clark leave the Byrds? (a) fear of flying (b) fear of success (c) fear of failure (d) fear of crowds
32. What do the Clash, Meat Loaf, and NBC's *Night Court* have in common?
33. Which girl couldn't help it? (a) Carroll Baker (b) Jayne Mansfield (c) Mamie Van Doren (d) Natalie Wood
34. Joe Lynn Turner is to Ronnie James Dio as _____ is to Ozzy Osbourne. (a) David Coverdale (b) David Lee Roth (c) Ronnie Van Zandt (d) Ronnie James Dio
35. Capitol's "Elvis Sound-Alike" contest winner was (a) Tommy Sands (b) Conway Twitty (c) Ral Donner (d) Gene Vincent.

Match the stage names with the given names:

- | | |
|-----------------------|-----------------|
| 36. Captain Beefheart | Ernest Evans |
| 37. Alice Cooper | Declan McManus |
| 38. Chubby Checker | Reginald Dwight |
| 39. Elvis Costello | Vincent Furnier |
| 40. Elton John | Don Van Vliet |
41. Members of Steely Dan got their start backing (a) Jay and the Techniques (b) Jay and the Americans (c) The Jaynetts (d) Screamin' Jay Hawkins.
42. "One" was recorded by (a) The Kalin Twins (b) Three Dog Night (c) Unit Four Plus Two (d) We Five.
43. Which person was not a member of Sun's "Million Dollar Quartet"? (a) Johnny Cash (b) Jerry Lee Lewis (c) Roy Orbison (d) Carl Perkins (e) Elvis Presley
44. Members of Free and Mott the Hoople formed (a) Sharks (b) The Firm (c) Bad Company (d) Spooky Tooth.
45. Their hit version of Bob Dylan's "Don't Think Twice, It's Alright" was recorded under the pseudonym The Wonder Who. (a) Four Tops (b) Four Seasons (c) Four Freshmen (d) Four Preps

Match the lyric with the song:

- | | |
|---|------------------------|
| 46. "I knew we was fallin' in love" | "All Shook Up" |
| 47. "The heat was hot" | "Careless Whisper" |
| 48. "Guilty feet have got no rhythm" | "Do Wah Diddy Diddy" |
| 49. "Strap your hands across my engines" | "A Horse with No Name" |
| 50. "I'm itchin' like a bear on a fuzzy tree" | "Born to Run" |

Send your completed quiz to BACKBEAT, HIGH FIDELITY, 825 Seventh Ave., New York, N.Y. 10019. Answers and the name(s) of entrant(s) who score highest will appear in a subsequent issue.



Pleasantly Surprised

The Darol Anger/Barbara Higbie Quintet: pushing the limits of their label

DAROL ANGER/BARBARA HIGBIE QUINTET:

Live at Montreux.

Ⓢ Steven Miller, Barbara Higbie, and Darol Anger, prods. Windham Hill WH 1036. Ⓜ Ⓛ

The first few times I listened to *Live at Montreux*, the duet-plus-ensemble recording by “new acoustic” musicians Barbara Higbie and Darol Anger, I dismissed its soft sound as it faded away, barely heard. As on many releases of this “new age” label, a delicate musical interplay predominates; there are few obtrusive junctures, no abrasions. This is Windham Hill’s signature sound—a pastel wash, moody and flowing. Detractors refer to this light-handed stuff as aural wallpaper; even admirers agree that it’s frequently the perfect soundtrack to a sleepy beach scene. A fan of the bite and jump of Higbie’s and Anger’s bluegrass fusion, I found myself drawn in by *Live at Montreux*’s subtle shading. Hidden away in the narcotic repetition are the duo’s warm improvisations drawn from jazz- and Eastern-inflected bluegrass repertoires (the basis for Anger’s catchy coinage, “new acoustic music”). And like the sound of waves reverberating in a conch shell, the rec-

ord’s overall effect is hypnotic. Yet despite its superficial seamlessness, *Montreux* is a divided venture that clearly illustrates the best and worst characteristics of new-age music.

“New age” is a catchall term that connotes to its proponents an introspective spirituality and wholistic perspective, for which Windham Hill’s meditations provide a soothing backdrop. But not all of the label’s artists would describe themselves or their work in this way. For the “Evening with Windham Hill” concert at which *Live at Montreux* was recorded, fiddler Anger and pianist Higbie drew together a quintet featuring Andy Narell (steel drums) and Rounder labelmate Mike Marshall (mandolin and guitar), another new-acoustic musician and composer, whose “Egypt” was performed for this session. Jazz-band leader Narell’s latinized rhythms and bebop sensibilities were prominent successes on last summer’s festival circuit; they balance and propel everything they touch on *Montreux*.

“Near Northern,” Anger’s windy fiddle composition, is the album’s standout. Despite Higbie’s cascading-waters piano ploys, the crescendos and fiddle/piano chases and

scalar climbs (involving both textural and tonal changes) reveal two talented, proficient players. “Northern” begins loudly (for this record) and takes off at a brisk but unhurried pace that is maintained throughout; it wins “Best of” on dynamics alone. Higbie’s pleasantly sad though aurally unchallenging “Duet” uses the same fiddle/piano conversations, but the piece passes diffidently through its theme and then withdraws, the instruments barely having made contact. Some of the flaws on *Live at Montreux* can be attributed to moderately successful compositions, but this is not true of all of them. In several more articulate cuts, the ensemble arrangements, bass lines, and Narell’s solos rescue what might otherwise have been hohum dismissives. When she’s freed from a supporting role, Higbie’s playing broadens, deepens. She releases her reserve in a rounded reading of her own “Daughter of Cups.” And Anger’s fiddle work is more intuitive than the shrill whine and choppy bowstrokes of the hammer-you-over-the-head world of his bluegrass takeoffs. But the record’s failure (and perhaps the label’s, too) is its overindulgent tendency. Too many similar sounds, too few inventions. Half of *Live at Mon-*

treux would have made an interesting, if short, album.

In recording for Windham Hill, composers have put aside their angular tunes and prior to Mark Isham's recently released *Film Music*, their vocal compositions. In exchange, they're rewarded with the finest polyvinyl chloride available and designer Anne Robinson's clean graphics. Her serene single-image photos, square borders, and straightforward typography reflect the surprisingly no-nonsense music inside. Critics cite this attention to packaging as evidence that the label sells homogeneity, muting individual artists' styles. It's even true that some of its catalog functions like a run-on sentence: It isn't always easy to tell where one release ends and another begins.

But no company is entirely successful, no a&r department catches all the best talent. Windham Hill's "A" list includes guitarist Michael Hedges (whose *Aerial Boundaries* contains the only solo version of "After the Gold Rush" I can stand), Irish traditional instrumentalist Michael O'Domhnaill, and pianist Liz Story on the Windham Hill label; guitarist Michael Lorimer on Dancing Cat; and Anthony Braxton on Magenta, the new jazz-only affiliate run by former Arista jazz director Steve Backer. Isham brought Higbie and Anger together for his movie soundtracks, and in turn they contribute ideas for future projects. Originally, Windham Hill's focus was narrower than its artists' aspirations. Those who have remained on the label have broadened its range along with their own.

Leslie Berman

DUKE ELLINGTON AND HIS ORCHESTRA:
Reflections in Ellington.

☉ Jerry Valburn, prod. *Everybody's EV 3005*
(Marlor Productions, P.O. Box 156, Hicksville, N.Y. 11802).

RCA Victor was making 33 $\frac{1}{3}$ -rpm long-playing records in 1932, sixteen years before the

LP was formally introduced by its rival, Columbia. Some of them were actually primitive stereo: Two microphones and two cutting tables produced two discs—one focused on the left side, the other on the right—that were made to be played simultaneously. Since either could be sold as a long-playing monaural record, however, most of them were. After half a century, the possibility of finding matching sets seemed unlikely.

But four years ago, collector Steve Lasker bought an Ellington disk at an auction. He thought it might be an alternate version because the matrix and take numbers differed from those on the issued recording of the performance. Yet, after obtaining a copy of that three years later and comparing the two with the help of engineer Brad Kay, Lasker finally realized that he had the right and left sides of a stereo recording; *Reflections in Ellington* recreates the 1932 orchestra in stereo.

Placed in the context of monaural recordings of the early '30s, the range, depth, and clarity of this session (February 3, 1932) are remarkable. A medley of "Mood Indigo," "Hot and Bothered," and "Creole Love Call" catches the Ellington band in transition from the lean, sinuous sound perfected at the Cotton Club to the richer, more luminous qualities that the band acquired in the mid-1930s.

The closeup clarity is not as consistent in a second Ellington session of six days later. This is another medley that includes a rather uncertainly balanced performance of "East St. Louis Toodle-Oh"; a dazzling Ellington piano solo, "Lots o' Fingers" (which he also recorded as "Fast and Furious"); and a "Black and Tan Fantasy" that brings Tricky Sam Nanton's growling trombone into focus as never before.

The rest of Side 1 and all of Side 2 consist of air shots by the band in August and September of 1940, a peak time for both composer and crew. The band bristles with excite-

ment on two tunes that were brand-new then, "Harlem Air Shaft" and "All Too Soon," as much as it enlivens older pieces such as "Stomp Jones," "Riding on a Blue Note," and "Rose of the Rio Grande." By themselves, these dates would be a valuable addition to an Ellington collection. But the two long-playing stereo medleys are essential.

John S. Wilson

DAVID MURRAY BIG BAND:
Live at Sweet Basil, Vol. 1.

☉ David Murray, prod. *Black Saint BSR 0085*
☐ (Distributed by Polygram Special Imports.)

When someone has a knack for delivering the goods, you come to expect a lot from him. With his quartet and octet, David Murray recast time-honored jazz settings in his own image. His instincts and ambitions are so on-target that the success of each new endeavor seems a given. So *Live at Sweet Basil, Vol. 1* really caught me off guard: It's raucous, humorous, spirited, and brusque, at once exciting and unsettling. And I'm still not sure what to make of it.

Despite the compositional possibilities extra instrumentation provides, this is a soloist's band. As an arranger, Murray works best in small numbers; he elicits broader tonal colors and dynamic range from his octet. The additional brass and reeds sound like they are being used for power rather than texture, but without doubt something got lost in the gummy mix. The horns congeal in the murk, and the piano and bass sound like they were recorded down the block at the Village Vanguard.

This isn't a tight outfit, but it swings like mad. Murray always encourages self-expression over precision, and the players respond with rambunctious, effusive sound. "Silence" and "Duet for Big Band" are roaring, unisonlike explosions with wild and woolly solos by trombonist Craig Harris and

I N T H I S I S S U E

JAZZ

ADAMS/PULLEN QUARTET:
Live at the Village Vanguard.

ANGER/HIGBIE QUINTET:
Live at Montreux.

DUKE ELLINGTON:
Reflections in Ellington.

RICKY FORD:
Shorter Ideas.

DAVID MURRAY BIG BAND:
Live at Sweet Basil, Vol. 1.

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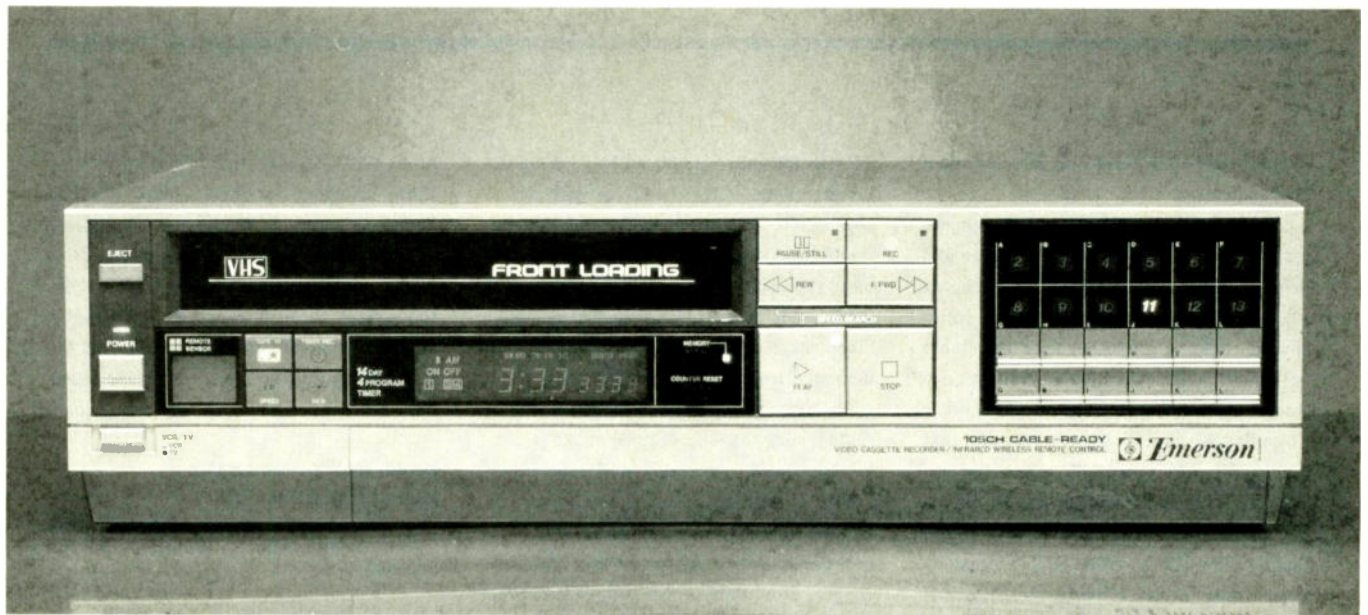
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Gary's Revenge

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By Drew Kaplan

We were embarrassed. We were upset. And, although we may have lost a battle, now we're going to win the war.

Last September we introduced a video recorder for Emerson that we thought would scoop the market. Well, by December, our scoop was being scooped.

And when DAK gets scooped, we don't just apologize, we pay. If you buy anything from us and find it advertised for less within 30 days, just send us the newspaper or magazine ad and we will issue you a merchandise credit.

So, by December we were really licking our wounds and plotting our revenge. Enter Gary, Emerson's Western Regional Sales Manager. Gary brought us the original recorder, for a very good reason.

Many of DAK's sales are in the Midwest and East, so we can sell tens of thousands of recorders without bothering the rest of his Western Region.

And, that's good for Gary because it makes his sales look real good at the expense of the Midwest and Eastern Regional Managers.

So, this time Gary has brought us a recorder we think can't be beat. With its 105 channel cable ready capacity, its wireless eleven function infrared remote and DAK's \$299 price, we challenge anyone to compete.

But, before we examine just what this 4th generation, Japanese crafted video recorder can do for you, let me share 3 real life reasons why you really should own any video recorder.

THE HARRIET FACTOR

Harriet is my wife's old team teaching partner. She had never had a video recorder. So, we gave her one. Several weeks later she called, absolutely elated.

She was recording The Phil Donahue show every day and watching it when she got home from school. She had also recorded several movies on cable that she kept missing while she was at work.

My parents are another story. They've

had a recorder for years (being my parents has its advantages). My parents have two loves, concerts (my mother is a concert pianist), and UCLA Basketball.

They go to concerts several nights a week and tape the UCLA games while they're out. Then if you can believe this, they make popcorn and stay up to watch the game till 1:30AM. Anyway, they just love their recorder.

Finally we have my wife's parents. And this is really important. We gave them a recorder and they didn't know how to hook it up. It never occurred to me that there was anything to hooking up a video recorder.

Just unhook the antenna from your TV and connect it to the recorder. Then connect the cable (included) between the recorder and your TV, and record.

Anyway, my father-in-law gets up at about 5AM, so they go to bed very early. Once they hooked up their recorder they discovered a whole world of late night TV. Now they watch Dynasty during dinner. And, look at this. They had never stayed up to see the Johnny Carson show.

Wow, a video recorder can let you watch what you want when you want without being restricted by your work, social life or sleep.

If you're like me, you probably won't tape and save. There aren't many movies that I want to see more than once or twice. But, wait till you see how convenient it is to plan your viewing hours to fit your own schedule.

LOOK AT ALL YOU GET

From the moment you put a video cassette into the front loading motorized slot and see it automatically drawn into the recorder, you'll appreciate the quality.

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You can choose any 12 channels from any band in any order you like for instant

one touch tuning at the recorder, or step through them from the infrared remote. **4 EVENT/14 DAY PROGRAM CAPABILITY.** You can select any 4 programs over a two week period to record.

So, if you're going on vacation, you can keep up with weekly series while you're gone, even on different channels.

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Plus, you can watch one show on your TV while you record another.



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You can touch the still frame button and freeze the action. Now you can really tell if the umpire was correct or not.

You can play the same movement over and over again until you are absolutely sure of what you've seen, while you relax

Next page please. . .

. . . Gary's Revenge Continued in your favorite viewing chair.

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AND MORE. There's a digital clock/timer and even a tape counter. LED's show all the functions. And, there's even a picture sharpness control.

There are both high and low speeds for up to 8 full hours of recording. And finally, when a tape reaches the end, it will automatically rewind.

It's made by Emerson. And, it's backed by their standard limited warranty.

WHY THIS RECORDER

Other than its super features, great picture and DAK's revenge pricing, there are 3 reasons to choose this recorder.

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Now you can do for your ears and brain what color TV has done for your eyes, with Universal's new amplified and electronically synthesized stereo system for your TV and video recorder.

It's amazing. TV sound is really great. It is actually broadcast on the FM band.

In fact, every one of the great sounding FM stations from FM 88 to 108Mhz that you enjoy listening to on your stereo system, is tightly sandwiched between channels 6 and 7 on your TV.

So, why do TVs sound so crummy? Well, if you compare a \$1000 stereo system to even the best \$800 TV, you'll realize that when you bought your TV, all that was probably discussed was the picture quality, sharpness, and color purity.

The truth is that in most TV sets, all the money goes into creating the best picture quality, and the sound is left to a cheap amplifier and a 3-5" Low Fi speaker.

POWER FOR THE VIEWER

Think about the bigger than life realism that enwraps you at a movie theater. It's called 'Sensory Emotional Involvement'.

The experience is a combination of the big picture and massive sound that together subconsciously cause your brain to register reality. Of course, you know it's not real (I hope), but subconsciously you have to keep reminding your brain.

It's the combination of sight and sound in tandem that act on your brain. And, it's the reason that even with a great TV picture, a single 3-5" speaker may sound loud, but it won't thunder. It may be soft, but it won't whisper.

And most important, with all the sound coming from just one point, your brain doesn't get any reality cues.

Now, without changing your TV, you can dramatically enhance the realism and sound quality by creating moving sonic cues which your brain will equate as movement in the picture.

Then you can add great fidelity with a pair of two-way specially shielded die-cast aluminum speaker systems with real woofers and tweeters.

And finally, provide enough amplified power to make a car chase come alive or an organ thunder. So, movement, fidelity, power and picture, equal reality.

SIMULATED STEREO PLUS

In a world where our brains are attuned to the sonic impact of stereo music, nothing turns off the feeling of reality more quickly than a single sonic source.

You get two different signal processing choices. Just running your TV signal to two speakers and amplifying it will increase the fidelity dramatically, but it

won't make the sound come alive.

The signal has to be altered. And, with Universal's new Amplified System for your TV or Video Recorder, you can select either of two realism enhancers.

When you switch to 'Simulated Stereo', you will be dividing and sending sonic data from about 500hz to 3,000hz to the sides of your room. These critical frequency areas largely determine where your brain perceives sound is located.

When you switch to 'Stereo', you will be altering the 'phase sensitive' elements of the entire musical spectrum.

This will tend to give you a wider, fuller sound for music. So, if your eye sees movement as a scene unfolds, and your ear senses movement or width of sound, your brain equates realism.

The Speakers. Twin two-way speaker systems with a wide frequency response produce simply vibrant sound. You'll hear sounds that you never knew existed.

You'll hear footsteps creak and doors open as your sound takes on realism. And, string basses, violins, and trumpets will emerge from the murk.

The Amplifier. Connect the two-way speakers to the amp (cables included). Then connect a cable (included) from the amplifier to either your TV's earphone jack (plug included) or your video recorder's output jack and get ready for a shock. Universal's Amp has built-in ANR auto-

matic noise reduction circuitry which cuts out hum and noise caused by TVs without sacrificing the high end. So, you'll have sonic placement, rich full sound and virtually no annoying noise.

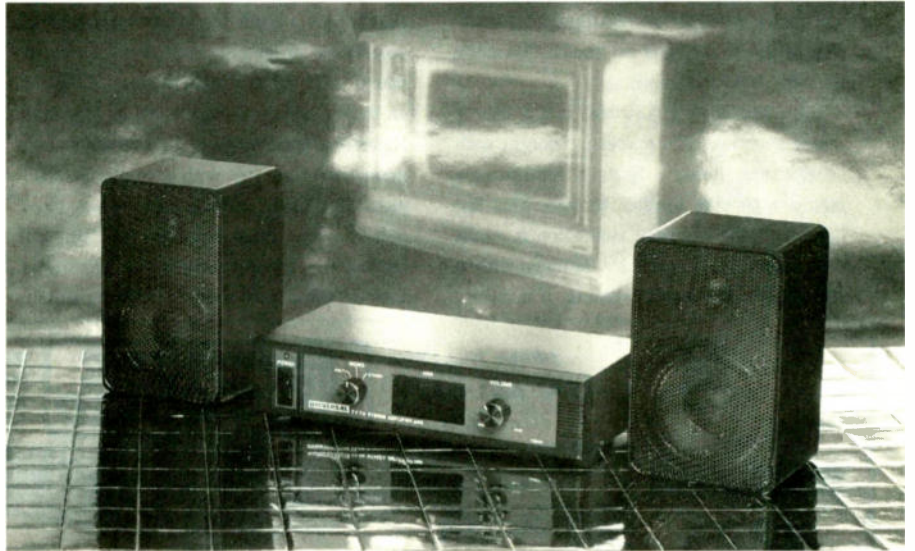
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cornetist Olu Dara. "Lovers," a romantic set piece for Murray's blustery tenor, is Ellingtonesque in its writing if not in its execution; adequate rehearsal time would have helped.

Everything finally jells on "Bechet's Bounce." The loose groove of the band is perfect for this modified New Orleans two-step. The jaunty classicism of John Purcell's clarinet and Murray's bass clarinet plays off the avant-vaudevillizing of Harris, Dara, and Bob Stewart, on tuba. Tying it all together is the ringing ride cymbal of Billy Higgins, still doing yeoman's duty 25 years after hitting New York with Ornette Coleman. If you are wondering what the reinvestigation of tradition in the Eighties is all about, "Bechet's Bounce" is your answer.

Murray is at a juncture in his career where each move he makes is fraught with significance. Being a linchpin for the new jazz is a terrible burden, though. This big band isn't the aesthetic revelation it might have been, but it provides Murray with a voice that's new and intriguing, if not fully

conceptualized. It's his way of having serious fun. *Steve Futterman*

GEORGE ADAMS/DON PULLEN QUARTET:

Live at the Village Vanguard.

Ⓛ *Giovanni Bonandri, prod. Soul Note SN 1094.* Ⓛ Ⓛ (Distributed by Polygram Special Imports.)

There's an aura of inevitability about the pairing of tenor saxophonist George Adams and pianist Don Pullen, since they both have such similar sthicks—a command of a more-than-competent modern mainstream style that frames a tendency to burst into ecstatic post-Trane arpeggios and atonal swirls of sound. Add the sympathetic bass of Cameron Brown and the versatile drums of Dannie Richmond and you have an impressive neo-mainstream quartet with avant-garde leanings. But these guys are more than just Sphere with temper tantrums. On their last album, the Timeless studio set *Decisions*, they demonstrated a range befitting a quar-

ter containing three Mingus vets; they essayed a Latin number, a traditional gospel song (beautifully done with a huge, sincere tenor solo), a rip-roaring free-floating bit of North Carolina blues, and a Monkish turn, and a corny blues with a game vocal from Adams.

Live at the Village Vanguard, recorded August 1983, barely suggests the group's versatility, though as is customary with live dates, it does display their ability to cook. Two of the four extended pieces here are up-

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tempo scorcher—"The Necessary Blues (Thank You Very Much, Mr. Monk)" and "Intentions" quickly reach frenzied levels—and although some listeners may resist the cheap-thrills aspect of these crowd-pleasing raveups, it's a pleasure to hear a unit that has been together for six years reach that almost telepathic level of interplay achieved by the best groups. Renditions of Ellington's "Solitude" and Mingus's "Diane" offer the band's more fluid, contemplative side; Adams joyously dances around the former's sensual melody, while on the latter, Pullen's rapid clusters almost satirically embellish his already ornate lyricism.

Some listeners might find the group's inside/outside approach a bit contrived; the outside material can sound tacked-on, particularly in the ballads. But for those willing to go along, it can be exhilarating.

Richard C. Walls

RICKY FORD

Shorter Ideas.

Ⓢ Michael Cuscuna, prod. Muse MR 5314. Ⓢ

As a concept, *Shorter Ideas* is about ten years overdue. Saxophonist Wayne Shorter's glory days as a composer of compact, rigorously crafted and melodically vibrant jazz tunes was essentially over by the time he joined Weather Report in 1970. But as far as I know, this is the first time a small group session has been centered around his work. Still, it's been worth the wait; Ricky Ford has put together a superb album that is both a tribute to an underappreciated writer and a showcase for his own maturing talents as an instrumentalist, arranger, and leader.

Given their seductive heads and fresh harmonic underpinnings, it's amazing that Shorter's compositions didn't become the improvisational meat of the '70s, as the work of Thelonious Monk and Horace Silver had for previous generations. In an era in desperate need of its own jazz repertory, Shorter's tunes cried out for reinterpretation, but only bop vets Stan Getz and Jimmy Rowles seemed to appreciate the gems they had been left.

Although Ford has long been regarded as a comer in neobop, I wouldn't have thought that he'd be the one to revisit Shorter's music. Ford is an aggressive player who dashes over chord changes with blusterous effusions; Shorter is elliptical, his loping notes shying away from the beat. But this difference in sensibilities helps prove a

point: It takes a particularly sensitive interpreter to bring out the nuances in Shorter's inimitable writing. Judging by Ford's deeply felt and utterly comfortable readings of "Yes and No," "Pinocchio," "Dance Cadaverous," and the stunning ballad "Miyako," it's clear he has been a diligent student, and the original "Tabloid Blues" is a lilting mood piece Shorter would be proud to call his own. This album has the zestful flavor of a classic Blue Note session without ever consciously copying a sound.

Not that Ford doesn't acknowledge some other influences. "Wolf Trap" finds him in Sonny Rollins's territory, cutting up on a swaggering calypso. And Ford's update of "Happy Anniversary," the ballad Duke Ellington wrote for tenor saxophonist Paul Gonsalves, reveals his roots while displaying his own contemporary sound. By the end of his solo, it is clear that Gonsalves of the '50s, Shorter of the '60s, and Ford of the '80s are all links in the same family tree.

Steve Futterman

P O P

PRINCE AND THE REVOLUTION:

Around the World in a Day.

Ⓢ Prince and the Revolution, prods. Warner Bros. 25286-1. Ⓢ

Prince is the eternal adolescent: narcissistic, lonely, horny, morbid. *Purple Rain* was a cataclysmic journey through the teenage psyche, knotting the fear of nuclear annihilation, the misery of parental discord, and the longing for erotic release with the joy of escaping into true love, friendship, and music. Although dreaming about the Big Escape—plunging into the womblike Afterworld—may rival sex as Prince's favorite pastime, his rather creepy flirtation with Armageddon is nothing new. It's just one more way to say, "I hope I die before I get old."

Around the World in a Day often reads like moony, pseudocryptic drivel; His Royal Badness isn't going to lead any revolution except his own with lyrics like "I'm blinded by the daisies in your yard" or with the naive anticommunism of the funky hora "America." This is *Sgt. Pepper* rewritten by a hermit. Although Prince can't approach the Beatles' sense of community (he doesn't understand that their songs were meant to be shared, not hoarded), he's fearless in his

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restructuring of mainstream pop form. The album doesn't grab you, but its lush, dense celebration of sound is captivating just the same. An oud and a darabukka dominate the Middle Eastern-flavored title track; "Paisley Park" paints a communal idyll in fluorescent lyrics as vocals drift up and down in time with the song's image of a girl on a seesaw; "Tambourine" takes "When Doves Cry" a step further, stripping down to the rhythmic skeleton of a James Brown workout.

The album's one great track is "Pop Life," a loping, spacey throwback to "Family Affair"-era Sly Stone, sliced by Sheila E.'s metronomic drumming. In the midst of such a self-referential record, its debunking of the celebrity myth is unexpected; Prince urges fans not to envy his life or feel cheated by their own, using a snippet of a boxing match to conjure up the precariousness of stardom. The song's lucidity and generosity make the hippie harmony of the other tracks seem even more artificial.

Around the World in a Day is a true head album: It's best enjoyed through headphones, in privacy, where Prince's paranoia, self-indulgence, and insularity can roam free. He wanted to be Paul McCartney; who'd have guessed he'd turn out to be Brian Wilson?

Joyce Millman

SUZANNE VEGA:

Suzanne Vega.
Lenny Kaye and Steve Addabbo, prods.
A&M SP 65072. □

Suzanne Vega sneaks up on you. A twenty-five-year-old New Yorker, this compelling singer/songwriter practices Nichiven Shoshu, a form of meditative Buddhism, a discipline that informs her music. Rhythms are soothing, melodies low-key and hypnotic; breaths and silences are as significant as notes and words. In the context of gentle, circuitous patterns, there are austere "soft rock" accents—like the synclavier guitar on "Undertow" or the electric violin on "Some Journey"—that take on heightened relevance. Only "Neighborhood Girls," which closes Side 2 with streetwise stridency, leans toward jazzy rock 'n' roll.

A former member of the musicians' cooperative that runs the Speakeasy, a Greenwich Village club, Vega made her recording debut in 1982 on their *Fast Folk* album/magazine, a monthly compilation. This traditional folk stylist's smooth, soft-spoken so-

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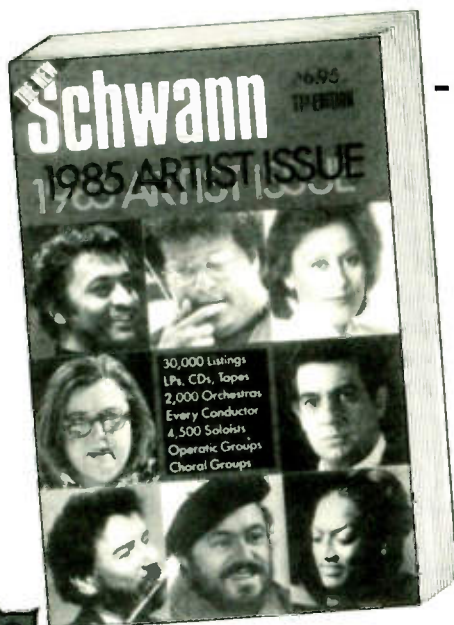
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prano dominates arrangements, and her favorite subject is herself—passing, distant but entranced, through a series of romantic encounters. The intimacy she conveys is elusive; direct expression of emotion is often artfully displaced by such wistful imagery as "freeze tag in the dark." For Vega, falling in love is a much a coincidence of time and place as it is a response conditioned by screen stars like Bogart and Bacall (in "Freeze Tag") or characters from medieval legend ("Knight Moves"). The masked individuals who tryst in her songs find communication difficult, if not impossible, and her placid, inquisitive heroine is often left standing alone—more mature, somewhat jaded, but still fascinated by romance. This insular idealism may seem clichéd, and to those who like their folk funny (as in Christine Lavin), funky (Laura Nyro), or politically aware (Joan Baez), *Suzanne Vega* may be claustrophobic. Some men seem put off or unsettled by this emerging feminist. But those who fancy a serious, winsome young woman in the process of sifting reality from fantasy will find her as relevant as she is captivating.

Rosemary Passantino

THE COMMODORES:

Nightshift.

Ⓢ *Dennis Lambert, prod. Motown MOT 6124.*

"Nightshift" would be a remarkable single even if it didn't mark the return of the Commodores to the Top 10 after the departure of former lead singer/future vice-president Lionel Richie. Pop, and r&b especially, so rarely acknowledges its debt to history that any act of homage is an anomaly. What's even more distinctive about "Nightshift" is that this tribute to Marvin Gaye and Jackie Wilson doesn't simply rest on sentimentality: Its arrangement may coo softly, but its percussion ticks with relentless syncopations, its bass relishes long, ominous slides. Above this clicking hum, vocalists Walter Orange and newcomer J.D. Nicholas glide along with the most tentative smiles, heaping such innocent praise upon Gaye and Wilson and the new "home" they've found that you'd guess they both want and fear that same deliverance. When all the band's voices huddle together at the end to harmonize on the line "It's gonna be a long night/But it's gonna be alright"—Nicholas caressing the word "alright" with some wavers that are pure Sam Cooke—they sing to comfort themselves at

the thought of their own ghosts, too.

Like that title single, *Nightshift* recasts the Commodores as an updated vocal group regaled by session hands, rather than as the slightly crazed, self-contained funk ensemble of their early career. In fact, the album's flimsiest moment comes when they bother to rock the house in the tame "Play This Record Twice." At the other extreme, they're also prone to statements of romantic puffery like "The Woman in My Life," whose logy pace and starry-eyed compliments wouldn't be out of place coming from—surprise—Lionel Richie. But at the medium tempos that Orange and Nicholas sing most tersely in, the band can dish up catchy, light soul that will get you through the day even if it doesn't dare disturb your sleep. The rounded keyboard textures and humble vocals of "I Keep Running," "Lay Back," and "Janet" meet synthetic drama and harmony-group poise halfway without compromising either.

But *Nightshift's* homogeneity can be equally attributed to its racelessness; for the most part, the rhythmic and vocal adventure that marks world-class r&b is passed over here in favor of the curtailed hook, the steadiest beat. Motown's Sound of Young America reasserts its formulaic norm with its gleaming mechanistic passion intact. Prodigal son Marvin Gaye must be enjoying a well-deserved laugh at this. *Mark Moses*

THE POWER STATION:

The Power Station.

Ⓢ *Bernard Edwards, prod. Capitol 4XJ 12380.*

With its wacky computer samples (digitally recorded sounds accessed for musical and special effects), Power Station's remake of "Bang a Gong (Get It On)" resembles Arthur Baker's cutup of Hall and Oates's "Out of Touch." Tony Thompson's drums seem about 20 feet wide and ten feet deep—drums of doom, if you will. How refreshing to hear a percussion track that has sensibility and personality, in addition to whomp; Daryl, John, and all the other button-pushing beat freaks out there don't *really* have big bam BOOM.

For all its meticulousness (the album was carefully assembled in three countries), *The Power Station*—featuring ex-Chic skin-scratcher Thompson, dapper white soulster Robert Palmer, and teen heartthrobs Andy and John Taylor (from Duran Duran)—sounds brazenly raw. Thompson dishes out thudding/thundering licks, matched by the

bold intensity of John's guitar, which decorates as well as leads, muscular staccato horns that gallop buoyantly, and Andy's throbbing bass. Engineer Jason Corsaro has pushed analog recording technology to the limit. (Oh, what a Compact Disc this would make!)

This disc's clomp is counterbalanced only by Palmer's slippery, mild-mannered vocals. Though his singing passes up some of Philip Bailey's spirit, it is evident that *The Power Station's* arrangements are cut from the same cloth as those on Bailey's *Chinese Wall*, one of 1984's most solid LPs. Both showcase a crisp, fat backbeat and stratospheric horns, and both walk the line between r&b and rock, treading where few other dance-rock records have. With two exceptions: "Still In Your Heart," which is sentimental tripe, and the fake funk of "Murderess."

"Some Like It Hot" (like "Go to Zero") is a seamless blend of metallic pop's dynamics and dance music's immediacy. A rubbery Chic-like bass, rhythm-guitar riffs lifted straight from Nile Rodgers's bag, a fiery lead, and a pumping horn arrangement produce scorching happy-grooves. "Harvest for the World," churning and tough, displays lyrics that would fit right in with "We Are the World" and the broader canvas of fame and military aggression. In light of USA for Africa's inspirational tonic, the words, previously sung by the Isley Brothers, seem even more palpable. Coming from a couple of photogenic wild boys, a good-time Chicster, and a well-tanned, seemingly unconcerned pleasure-island resident, the social consciousness surprises. On the heels of this project, more suburban kids shouting the Chic cheer, more sales for Palmer, and more respectability for D² should, however, be no surprise.

Havelock Nelson

KATRINA AND THE WAVES:

Katrina and the Waves.

Ⓢ *Katrina and the Waves and Pat Collier, prods. Capitol ST 12400.* Ⓢ

Though this is Katrina's first Stateside album, these songs have already appeared on indie singles or on one of the group's two albums for Attie, a Canadian label. Some of the tracks have been altered (slightly) by coproducer Collier, who beefs them up for radio and the dancefloor. But the music—guitar pop with plenty of muscle and dark overtones—doesn't suffer. Katrina and the

Waves would be an impressive debut in any year.

The two key figures in this Cambridge, England, four-piece (which, by the way, is virtually unknown in the U.K.) are singer/rhythm guitarist Katrina Leskanich, a Kansas native raised on British military bases, and Kimberly Rew, formerly of the Soft Boys, who plays lead guitar and writes most of the songs. Katrina the vocalist is firmly rooted in the Sixties, but like Chrissie Hynde (with whom she also shares both breathiness and huskiness but not much else), she's less influenced by girl-group than by male and female solo singers from throughout that decade. Rew is assured and versatile, but what makes him such a perfect foil for her are his simple/simpatico fills and backgrounds.

On their best-known song, "Going Down to Liverpool" (first popularized by the Bangles), Katrina stresses the melody's similarity to "Hey Joe." On "Cry to Me" she preaches like Solomon Burke (though I suspect she learned how from Mick Jagger) over a Sixties r&b progression that also manages to suggest Jimi Hendrix's "The Wind Cries Mary." "Que Te Quiero" and "Mexico," two successful attempts at international pop, show the influence of bassist Vince de la Cruz (who, by the way, is another army brat, with Texas roots).

"Red Wine and Whisky" starts out wispy and faintly good-timey, but quickly develops an unexpected sense of foreboding as Katrina belts the chorus and Rew's guitar seconds her emotion. "Do You Want Crying" has such a bright sound that you might not notice what a bitter song it is. "Machine Gun Smith" is an alarmed (and alarming) denunciation of American military adventurism. The album goes out on the buoyant, cheeky "Game of Love," with Rew turning in his own version of Chuck Berry (via Keith Richard). It's a leap through several decades that this band makes easily. John Morthland

VARIOUS ARTISTS:

Greek Oriental Songs and Dances (1928-34).

Ⓢ *Folklyric 9033. (Distributed by Arhoolie Productions.)*

If you've ever gone to a Greek restaurant or nightclub, or even to a movie filmed in Greece, you've undoubtedly heard the intriguing sounds of *rebetika*—the haunting and melancholy vocals, the sly bouzouki, the

insinuating and graceful dance rhythms that evoke images of Mediterranean gypsy nights (or perhaps just *Zorba*). *Rebetes*—the urban poor—scorned the establishment, and their songs, when not about love, dwelt upon the concerns of the societal outcast: poverty, jail, the underworld, death, hashish. . . . They developed their own Bohemian culture with its private but poetic slang; they were the hipsters of Athens and Piraeus.

The earliest *rebetika* is not from Greece at all, but from the Greek communities of Turkey, especially Smyrna (now Izmir). When the Greco-Turkish wars forced more than a million Greeks to leave Turkey (1922-23), a complex interaction between the two countries' musical styles ensued. Eventually the Greek style prevailed; the many subtle Arabic/Oriental modes, with their infinite possible inflections, moved closer to simple major and minor scales, and the flowing introductory improvisations (*taksim*) grew shorter, even perfunctory, as the music went "pop." Yet just as African characteristics continue to surface in black American music (look at break dancing!), an Oriental conception remains at the heart of all authentic *rebetika*. It is to these origins that this anthology is dedicated; by 1937, the Oriental (Smyrnaean) style was no longer in vogue.

Although the Middle Eastern instruments and textures may sound unfamiliar at first, repeated listening reveals how free the soul was to travel before it was imprisoned by the diatonic accompaniments of recent years. From the very first track, "Zmirneikos Balos" by Marika Pappika, we enter another world of emotions, where slight changes in tone indicate subtleties of mood unknown in European music. Melodies can be elongated and caressed or cut suddenly short, sung in hushed whispers or harsh tones of reproach. Rhythm, although most often danceable, also varies; "Gazeli Mustaar," for example, moves from soul-searching, out-of-tempo improvisation to a lively *zeibekiko* dance rhythm.

Rebetika has often been compared to the blues. Just look at the lyrics to "Gazeli Mustaar": "I always try to flee the fire, but get burned just the same/To whom can I complain of it, when I've my luck to blame?" Like the blues in this country, *rebetika* almost died out, but has been revived in recent years. One hopes that *Greek Oriental Songs and Dances* will shed some light on its mysterious origins. Joe Blum

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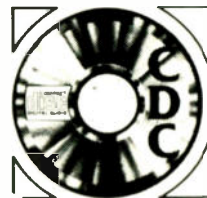
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JAMES BOND

(Continued from page 48)

sultry performance of Black's title lyrics can't hide the fact that, for the first time, the composer really hasn't anything interesting to say.

Eleven years after the Jamaican settings of *Dr. No* ushered Barry into the Bond series, the Jamaican settings of *Live and Let Die* (1973) ushered him temporarily out. It was goodbye Connery, hello Roger Moore, and hello George Martin, the veteran pop music producer/composer. I suspect Martin was something of a Barry fan. Certainly his instrumental music for the Beatles' film *Help!* captured something of the brassy energy of the Bond sound. Martin's score for *Live and Let Die* similarly pays its dues to Barry, but it also speaks with striking individuality, making this my favorite of the non-Barry soundtracks (Liberty LT 50100). The styles include New Orleans jazz (expertly arranged by Milton Batisle), Harlem soul, good old rock 'n' roll, Jamaican percussion, and standard cinema symphonic music. Not only does it all work together, but Martin also contributes my favorite melody from the Bond films, an exquisite little tune introduced as a secondary subject for the cue "Bond Meets Solitaire." The title song, by Paul and Linda McCartney, is true to the film and true to rock 'n' roll.

Barry returned to the series to score *The Man with the Golden Gun* (1974), and I wish he hadn't: This is his weakest 007 soundtrack (Liberty LW 50358). The problem lies in his attempt to meld the classy, chrome-plated Bond with vaudeville. The grafting of barrelhouse piano and slide whistle onto the Barry sound just doesn't take. Even less successful is Lulu's attempt to better Bassey by belting (nearly shouting) out Black's title lyrics.

The penchant for double entendres began delightfully in the early Connery films. By the time of *The Spy Who Loved Me* (1977), the puns had become *de rigueur*, too often declaimed by a Roger Moore in the early stages of *rigor mortis*. This time, the wordplay makes it into Carole Bayer Sager's lyrics for "Nobody Does It Better," sung by Carly Simon. Marvin Hamlisch provides all the music and is clearly out of his element. He manages a slick jazz-pop score that, like the film it-

self, is a sorry example of how far standards had slipped (Liberty LO 50774).

Moonraker (1979) may have continued the downward slide of the Bond series in terms of gadgets over plot, but Barry was back at the musical helm, and here, at least, things picked up (Liberty LOO 50971). Barry's richly resonant score conjures up some of the old verve and romance of the earlier Bond sound. Besides, with Shirley Bassey on hand to inimitably perform Hal David's title lyrics, how could it go wrong?

Rocky meets 007 in the person of Bill Conti, who wrote the score to *For Your Eyes Only* (1981) (Liberty LOO 51109). Conti is an uneven composer capable of very good things. Although this score too often relies on a mindless bass beat augmented by some very commercial electronic sounds, there are moments when Conti's integration of the Bond theme into the music is deft, humorous, and enjoyable. The title song (lyrics by M. Leeson) is an effective pop ballad sung by Sheena Easton.

Bond became twins in 1983 with the release of two new 007 films. Moore continued the "official" series with *Octopussy*, and Barry was on hand to provide an excellent score (A&M SP 4967). Curiously, a few ideas that failed in *The Man with the Golden Gun* are revived here in a new context to great effect. Barry's scoring is now more evenly distributed throughout the orchestra, with the strings claiming a share of the music equal to that of the brass and winds. Barry recovers his knack for piecing together wonderfully attractive episodic cues; this, plus a richly conceived characterization for solo saxophone, helps make the score one of his best. Tim Rice's wordplay in "All Time High" is delivered by Rita Coolidge.

About the music for the *other* Bond of '83, the less said the better. There is little to commend Michel Legrand's score for *Never Say Never Again*. Legrand fails completely to convey anything of the exotic, contemporary sound so well established by Barry et al. The title song is rendered *à la* Sergio Mendes & Brasil '66 and proves to be a breezy nonentity. The score (unable to use even a suggestion of the Bond theme) offers nothing memorable. Little wonder this soundtrack is available only as an expensive Japanese import (Seven Seas K28P 4122).

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