

SEPTEMBER 1983 • \$1.50

Stereo Review

NEW AUDIO TECHNOLOGY AT CES

CD Players • Cassette Decks • Car Stereos
Digital-Ready Amplifiers, Receivers, Speakers

CHOOSING A PERSONAL PORTABLE

NEW SOFTWARE

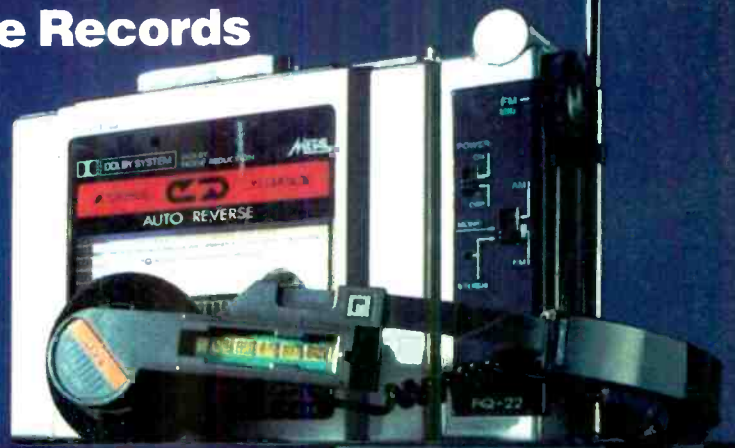
Compact Discs • Audiophile Records
Video Discs • Digital Tapes

Equipment Test Reports

- Aiwa AD-F660 Cassette Deck
- Tandberg 3012 Integrated Amplifier
- Denon DRA-300 AM/FM Receiver
- Goldring Electro II Phono Cartridge
- Design Acoustics PS-10 Speaker

Disc Specials

The Police • Local Hero
George Jones
Wynton Marsalis
Mozart's Symphonies
Verdi's *Nabucco*
Brahms's Vocal Duets



H I G H V I D E O F I D E L I T Y



"Flashdance" is available on Stereo Beta Hi-Fi Videocassettes from Paramount Home Video for \$39.95. © Paramount Pictures Corporation.

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Stereo Review®

(ISSN 0039-1220)

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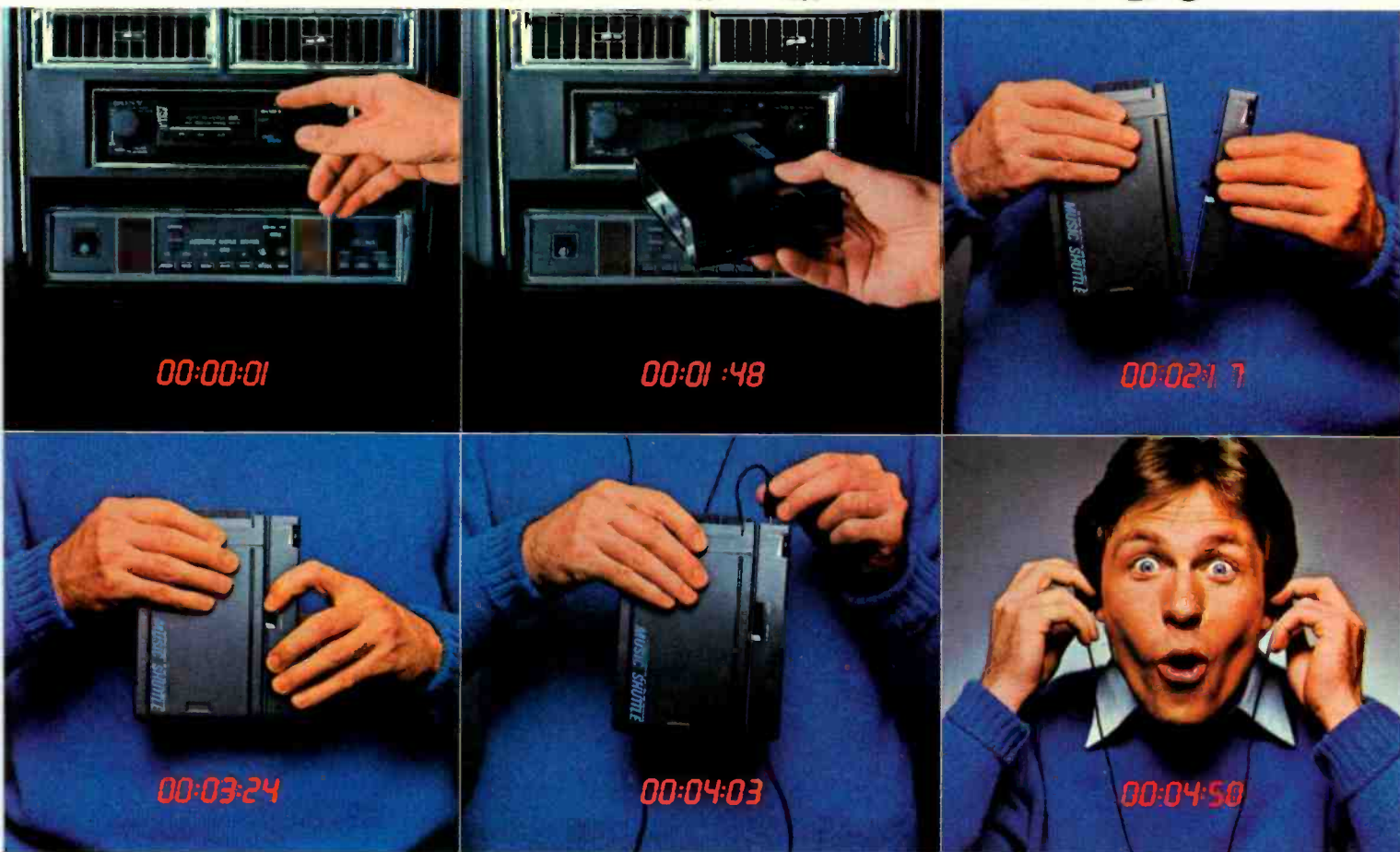
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COVER: Design by Borys Patchowsky; photo by Bruce Pendleton. For more on JVC's CQ-F22K "component" personal portable (top), see article on page 69; for the Hirsch-Houck Laboratories test report on the Aiwa AD-F660 cassette deck, see page 37.

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Bulletin

Edited by Christie Barter and Gordon Sell

● THE SUPREME COURT, unable to reach a decision on the so-called Betamax case, has asked representatives of both sides to present more evidence this fall when the court reconvenes. Revolving around the movie industry's claim that home videotaping enables people to enjoy copyrighted materials without compensating the copyright holder, the Betamax case has parallel implications for audio recording. Congressional legislation to legalize home taping has been sponsored by both sides. The media producers, Hollywood and the recording industry, want a royalty surcharge added to the price of tape and tape equipment to provide funds to reimburse copyright holders. The electronics industry opposes any such fee. Whichever side loses in the Supreme Court is expected to try to get its way through legislation.

● RENT-A-RECORD businesses may never see the light of day if the House of Representatives follows the Senate's lead and approves legislation that will revise the so-called "First Sale" doctrine. The legislation would enable record companies to prohibit people they sell records to from renting them out. The renting company would need the record producer's permission to rent the records, and no company is likely to allow a practice it thinks will cut into its sales.

● GLOBAL FIRST: EMI Records in England has issued what it calls "the world's first computer game pop single." On one side of the disc is Camouflage, a musical number by Chris Sievey and the Freshies, which can be played on any conventional turntable set at 45 rpm. When the flip side is put on, the music is the same, but, if the player is hooked into a Sinclair ZX81 personal computer, the lyrics appear on a video screen. This side also contains two computer games created by Sievey.

● AMERICAN FIRST: The Opera Theatre of St. Louis, which just finished its eighth season under founder-director Richard Gaddes, will be the first U.S. opera company to play the Edinburgh

Festival when it opens there September 6 with Stephen Paulus's The Postman Always Rings Twice. Based on the novel by James M. Cain, the opera had its world première in St. Louis in 1982.

● LATEST CD LABEL ENTRY is A&M Records with five albums in the new format scheduled for late-September release: Joe Jackson's "Night and Day," Quincy Jones's "The Dude," the Police's "Synchronicity," Bryan Adams's "Cuts Like a Knife," and Cat Stevens's "Greatest Hits."

● THE GRAND OLE OPRY, long the most prominent showcase for country music, in Nashville, Tennessee, has been sold by American General Corp., an insurance company in Houston, Texas, to the Gaylord Broadcasting Co. headquartered in Oklahoma City. The package included Opryland USA (a theme park), a hotel complex, two radio stations, and the Nashville Network country music cable system. Reported price: \$270 million.

● MUSIC ON PBS this month includes In Performance at the White House on September 21. The show features soprano Leontyne Price and conductor James Levine, who will perform and introduce young artists from the Metropolitan Opera's apprentice program...The Live from the Met series opens the season with Lucia di Lammermoor September 28. Joan Sutherland and Alfredo Kraus head the cast; Richard Bonyngue conducts. Check local PBS stations for times.

● LP'S DOWN, SINGLES UP IN 1982: The Recording Industry Association of America has estimated that 2,630 new LP's were released by American record companies in 1982, down about 6% from 1981, while the 2,745 new singles titles represented a 3.5% increase over the previous year. The decline in the number of new LP's continues a four-year trend, resulting in an overall decrease of 37% since 1978. The number of cassette titles, on the other hand, was up by 10% last year. New cassette releases now represent about 93% of all LP titles, up from 88% in 1981.

Speaking My Piece

By William Livingstone



SOFTWARE

TOWER RECORDS, a West Coast chain of stores with branches as far away as Japan, has just opened its first store east of the Mississippi. It's at Broadway and East Fourth Street in New York, and Tower bills it as the largest record store in the world. New Yorkers have responded by swarming all over the place and spending money as though they had never heard of a recession and had never seen a record store before.

Few if any of us had seen one so well stocked. Before going to inspect the premises the first time, I reminded myself that I already have many records I've never played and don't need any more. On that first visit I bought ten. I went back the next day and bought ten more. Well, they were tempting cut-outs I'll probably never see again, certainly not at those prices.

Everybody I know who works in or close to the record business has a similar story: "I wasn't going to buy anything, but there was this King Crimson import of stuff never released in this country," or "I never thought I'd see an unplayed set of the old EMI *Carmen* with Solange Michel," or "They've got Japanese repressings of jazz classics that sound better than the originals." Besides being well stocked, the store is clean, comfortable, and a pleasant place to browse.

Last year I had surgery at Roosevelt Hospital, and I was impressed that everybody down to the man who mopped the floors seemed concerned about my comfort and recovery. A friend explained that a hospital's attitude toward patients is set by the top medical personnel and trickles down from them to the staff.

The staff at Tower Records in New York seem happy to be working there and eager to help customers find the discs and tapes they want. It makes me

think this attitude must trickle down from managers who love records and consequently understand and like record collectors.

Having a lot to choose from seems to stimulate collectors to spend money. You collectors should brace yourselves then, because although somewhat fewer new titles are being issued, you have a choice of some of them in an increasing variety of forms. A Rolling Stones fan, for example, can choose to have "Sticky Fingers" on regular analog LP or prerecorded cassette or on a Mobile Fidelity audiophile pressing or on a cassette tape from the same company. Beethoven's Violin Concerto played by Itzhak Perlman with the Philharmonia Orchestra conducted by Giulini can be had on Angel LP or cassette, on video cassette, or on Pioneer video disc.

The term "software" has been borrowed from the computer field to refer to all the different kinds of discs and tapes used to feed musical information to the audio and video machines that are "hardware" for those of us who consume music via electronic means in the home. In this issue in addition to our regular section of reviews of discs and tapes we have a section (beginning on page 74) on music in some of the other software formats: Compact Discs, digital tapes, video discs, and audiophile records.

In a report from the most recent Consumer Electronics Show (beginning on page 58), E. Brad Meyer discusses some of the ways that new technology is affecting hi-fi hardware. What seems to be holding up wide acceptance of some of the new technology is availability of software. This means the ball is now in the court of the record companies. Let us hope their managers behave like people who love software and understand and like software collectors. □

Stereo Review

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"That night
I was listening to
the bass player cook.
As his hands went
spidering up and down
the strings
his thum-thum-thum
became the group's
heartbeat — and mine too.
In my living room, I had
traveled once again to that
smokey little jazz club long ago."
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SO CLEAR YOU'LL
THINK YOU'RE
LISTENING
TO THIS.



You know what often happens just when the music really starts cooking on your car's FM stereo.

Because your car's moving, and FM reception conditions are constantly changing, you can end up with something that sounds like bacon sizzling on a hot griddle.

The static, the whine, the fading, the cutting in and out of

twisting names for the phenomena that causes this to happen.

Names like multipathing and three-signal-intermodulation.

You, on the other hand, also call it names. Like "that *&%#! static" or "the *&%#! station's cutting in and out" or "I'm losing the *&%#! signal." (Not to mention your temper.)

But because nothing is more important than music to

the engineers at Pioneer, they've been working continuously developing the technology to virtually eliminate the sound of static and *&%#! from your car.

WHICH TUNER GETS THE BEST RECEPTION IS NOW PERFECTLY CLEAR.

It's one thing to boast that only Supertuner III can all but eliminate the aforementioned irritants to your listening pleasure.

But Pioneer wanted to prove it. By road testing Supertuner III against the highest quality FM stereo tuners currently available.

The test was conducted in perhaps the worst reception area in America. Chicago, Illinois. If Supertuner III performed well here, it would perform well anywhere.

Using the same car, with

Because cars move and radio stations don't, the further you drive from the transmitter, the weaker the signal. Until Supertuner III, the only thing you could do about it was lose something else. Your temper.

the same antenna, and driving around and around the same block on the Near North Side (where the John Hancock Building and the Sears Tower, the world's third and tallest structures, respectively, create FM listening havoc), Pioneer put one tuner after another to the test.

And the clear winner, time after time, in both downtown and suburban conditions, was Supertuner III. Only Supertuner III received stations with no sound of

sizzling bacon. And only Supertuner III could capture and lock in the weak stations.

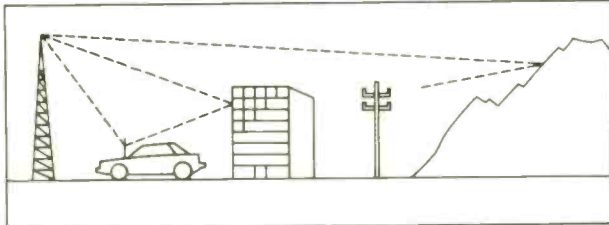
Reading this description of the test may be somewhat convincing. But not nearly as convincing as actually hearing the

performance of Supertuner III.

To do that, you'll have to go to your nearest car stereo dealer and ask him for a demonstration of the new Supertuner III.

There's a very good chance he'll already have one installed in his car.

That alone should tell you something.



A lot of things stand in the way of good reception. Like buildings. Mountains. Even telephone poles. The radio signals bounce off them and cut into the direct signal. Causing listening havoc for those who don't have a new Supertuner III.

stations. The kind of stuff that makes you grind your teeth.

Even with all the advancements in tuner technology, you've been left with only two alternatives.

Switch stations. Or pop in a cassette.

But now, there's Supertuner III. From Pioneer.

A car tuner that doesn't merely rely on convenience gadgets to make you happy.

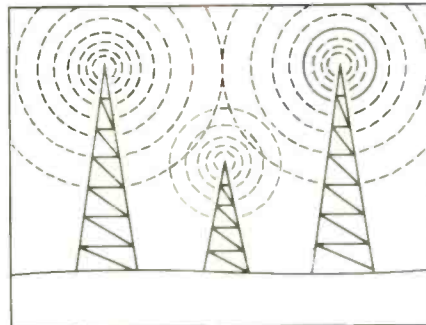
But one that actually delivers the clean, clear FM reception you should be getting in this day and age.

The kind of interference free sound you thought you could only get from a cassette.

ADVANCED TECHNOLOGY THAT VIRTUALLY ELIMINATES THE SOUND OF *&%#! FROM YOUR CAR STEREO.

Nothing interrupts the pleasure of listening to music on your car's FM stereo more than interference.

Engineers have a bunch of tongue-



Three-signal-intermodulation occurs when a weak signal is surrounded by two stronger ones. And, as they say, only the strong survive. So you get stations cutting in and out or "bleeding" into each other. Unless you have a new Supertuner III.



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Letters

Compact Discs

● The coverage of the digital Compact Disc players and software in the July issue was excellent. I just purchased the Sony CD player, and I am delighted with what it's done for my stereo system. The sound is *great*, especially the bass—I was never really aware of how much bass energy my thirteen-year-old Advent speakers were capable of putting out!

My interest in audio has waned over the past several years, mainly due to the excitement in the video marketplace: component television, video-tape recorders, video-disc players, stereo sound, etc. Thanks to the heavenly sound of the Compact Disc players, my interest in high fidelity has been renewed. Now, if I could just find a willing buyer for my thousand-plus collection of LP's so I could afford an unlimited supply of Compact Discs

ROBERT E. DECKMAN
 Los Angeles, Calif.

● I pass on this warning to other potential buyers of Compact Discs. Old recordings that originated on analog tapes are now available in the CD format, but those I have seen are labeled "mastered digitally." I consider this practice exceedingly misleading, calculated to deceive the unsophisticated consumer.

All CD's derived from analog tapes should be properly labeled as such in big type. If the manufacturers will not take corrective steps themselves, then perhaps another government regulation (shudder) is needed. Meanwhile, let the buyer beware.

PAUL M. ROSE
 San Francisco, Calif.

Audio Myths

● Allow me to offer some addenda to Peter Mitchell's July article on "21 Audio Myths." While unweighted noise measurements are certainly not meaningless, they are difficult to interpret and can be misleading. Two products may have identical A-weighted noise specifications, but if one has a wider bandwidth it will exhibit higher unweighted noise, since A-weighting de-emphasizes high and low frequencies. It is therefore possible to discriminate against a better-sounding product by considering only an unweighted measurement.

Regarding harmonic distortion, I understand that flute solos and other simple sounds are still being recorded, so look for a component with less than 3 per cent total harmonic distortion (THD). On the other hand, you probably couldn't find a component amplifier with that much distortion today even if you wanted to. The THD spec is one of those that won't tell you if an amplifier sounds good, but it may point to one

that can sound bad. Avoid products that show a rapid increase in distortion as impedance drops or as the frequency rises, since that may predict other problems.

JOHN H. ROBERTS
 Manchester, Conn.

Bryan Adams

● I just wanted to thank Mark Peel for confirming my belief that most music critics don't give good advice. His review of Bryan Adams's album "Cuts Like a Knife" in July is a farce. In the same issue, Mr. Peel hails David Bowie's new album. What



Bryan Adams: does he cut it?

a joke. Mr. Peel is unimpressed by Adams's lyrics, yet he praises Bowie's writing, such as "If you say run, I'll run with you;/if you say hide, we'll hide." Boy, Mark, those are brilliant lyrics if I ever saw any. "Cuts Like a Knife" is one of the best albums I have bought, and I have heard several other people say the same thing. Mr. Peel, like most other critics, seems to think that originality is a viable substitute for quality and enjoyment. My view is that if it's commercial music that's well written and performed right, it's a good album. I will read Mr. Peel's reviews in the future not because I respect his opinions, but because I know that if he pans an album, it's a pretty safe bet that the album is good.

RICH PHILLIPS
 Columbia, S.C.

Numbers Games

● One wonders how manufacturers of audio equipment come up with their exotic model numbers. In my own system can be found such esoterica as A-2300S, RD-5300, 582Z, C-4000, 500A, DQ-10, SB-F1, KX-2501, and HR-7650U. How could such numbers ever evolve, and what would compel a manufacturer to use them?

I had hoped that with Compact Disc



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players, manufacturers beginning a new product line would at least try to dispense with the more exotic, mystifying, and unnecessary numbers and letters. So what do we get in STEREO REVIEW's July report on the very first models? DA-1000, L-03DP, DX-3 (what happened to 1 and 2?), FD1000 SL, 9500, SL-P10, and XR-Z90 (XR-Z90?). Not terribly bad are DP-101 and CDP-101, while DA-01 is sensible and Yamaha's CD-1 is a refreshing departure. Model names are too often used as little more than window dressing to attract the eye of the purchaser and not, as they should be, to identify a product. I can see already that, except for a few companies, CD players aren't about to buck that trend.

RON HARDCASTLE
Los Angeles, Calif.

● RE "Audio Q. and A." in July: So, according to Larry Klein, we FM broadcasters are "simpleminded" for rounding off our frequency assignments to make our dial positions easier for our audiences to remember? No! Simpleminded are the designs of most of the radios in use, with their ill-conceived and poorly calibrated frequency scales and pointers! *Clever-minded* are those radio programmers who find a catchy, easy-to-remember "hook" for listeners. Which is easier to remember, "WKSS, 95.7 FM" or "96 KISS"? We have would-be listeners who can't seem to find the AM/FM switch on their radios, let alone remember a three- or four-digit frequency.

Of course, with the increasing number of

receivers sporting digital "dials," we will no doubt have to change our manner of identification, but until then, please try to avoid simpleminded generalizations.

JIM PERRY
Chief Engineer, WKSS-FM
Hartford, Conn.

Larry Klein replies: I did not say that broadcasters were simpleminded, only that they judged their audiences to be so. And perhaps—present readers excepted—they are frequently right.

Techno-Pop

● In his June review of Thomas Dolby's "Blinded by Science," Mark Peel caught sight of the exact reason why techno-pop is fast becoming a fashionably sterile form of music. Pop musicians have yet to realize that even with all this gorgeous technology at their fingertips, it is they who have to create the verve and utilize their imagination and talent to realize the full potential of electronics. "Serious" electronic composers such as Jean-Michel Jarre, Klaus Schulze, and especially Isao Tomita have already mastered this technique of transforming imagination and talent through electronics to produce music that is anything but perilous and alienating.

The synthesizer is an instrument, and it can be played well or poorly. For years, reactionary publications such as STEREO REVIEW have given their readers the im-

pression that synthesizers are machines incapable of producing "real" music. Mr. Peel is the first pop critic at STEREO REVIEW to show that he is neither narrow-minded and reactionary nor caught in that most laughable of decades, the Sixties.

TIM DUGDALE
Sarnia, Ontario

Music to Die By

● In a review (April) of a new recording of Prokofiev's two violin concertos, Richard Freed remarks that "the slow movement of No. 2 as performed here could almost challenge the one in Schubert's great string quintet as the music one might want to hear in one's last hour on earth." This suggests a delightful new parlor game.

The second Mme. Debussy is reported to have said that she wanted to hear the andantino movement of her husband's string quartet in her own last hour. Whether the wish was fulfilled we don't know, but it seems a worthy candidate. For myself, I think I might choose another Debussy piece, the Sonata for Flute, Viola, and Harp, a work of divine melancholy. Depending on my mood at the time, I might even consider a pop song, Jimmy Webb's *MacArthur Park*, also divinely melancholy in its own curious way (no sophisticated titers, please). A toast, then, to going out in style!

LOUIS SACRISTE
Antioch, Calif.

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V15 Type V
with new
MR tip.



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 girls wore "poodle" cuts ... everybody moved to suburbia ...
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THE GREATEST RECORDINGS OF THE 1950's

ARCHIVE COLLECTION

From the ballads of Bing Crosby and Doris Day to the birth of Rock 'n Roll—over 500 great songs performed by leading stars of the 1950's. Including out-of-issue and hard-to-find recordings from the archives of the leading record companies of the time.

THE DECADE OF THE 1950's was the greatest in all of American popular music. It brought to the scene the most dynamic singers—the finest composers—the most memorable songs of our time. And the 1950's was also the decade of recorded sound—when more hits by more top artists were put on records than ever before.

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The sounds of a momentous decade

Here are the *great vocalists* singing the great songs: Tony Bennett with "Rags to Riches," Jo Stafford with "You Belong to Me," Nat Cole crooning "Mona Lisa," Eddie Fisher with "Oh My Papa." Here are the *duos, trios and groups*: the Mills Brothers, Les Paul and Mary Ford, the Weavers, Bill Haley and the Comets. Here are the *great bands and orchestras*: Count Basie, Harry James, Ray Anthony, Gordon Jenkins and Mitch Miller.

And there are *rarities* too. The panel included hard-to-find recordings such as Bing Crosby and Grace Kelly singing "True Love" (the only record she ever made). The inimitable Louis Armstrong doing "Mack the Knife." And Jane Froman with her emotional rendition of "I'll Walk Alone."

All the most memorable recordings of that fabulous time—in one outstanding collection to enjoy for years to come.

Strict standards of quality control will be maintained throughout the production of these records—to make certain the *full quality* of each original recording is retained. The records, which are thicker and heavier, will be pressed in an atmosphere-controlled "clean room" where careful attention is paid to pressing and inspection. And a special anti-static vinyl compound will be used,



Collection available on high-quality records or cassettes.

which resists the accumulation of dust in the sensitive record grooves. The result is a collection of *proof-quality* records that actually sound better than the originals!

Handsome library albums included

A matched set of hardbound library albums has been custom-designed to house the entire collection. And each album will be accompanied by a specially-written commentary—fully illustrated—that weaves together the music, people and events of the time.

If you remember the decade of the 1950's with fondness ... if you long to enjoy again the best music of the decade ... or if you want to be introduced to one of the most exciting eras of our time ... this is an opportunity not to be missed.

But please note: This collection is available *only* by subscription and *only* from The Franklin Mint Record Society. It will not be sold in any record stores. To subscribe, mail the application on this page directly to The Franklin Mint Record Society, Franklin Center, PA 19091, by October 31, 1983.

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Please enter my subscription for The Greatest Recordings of the 1950's, Archive Collection, consisting of 50 proof-quality records in 10 special hardbound albums with illustrated commentaries. The issue price for each record is \$10.75* plus 80¢ for packaging, shipping and handling.

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Check here to receive the collection on high-quality, Dolby** encoded, chromium dioxide tape cassettes. Same subscription plan, \$1. extra per cassette.

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New Products

Latest Audio Equipment and Accessories

Sony's Deluxe Compact Disc Player

□ Sony's CDP-701ES digital Compact Disc player, said to have the most versatile control layout Sony has ever offered on a consumer product, is designed for the audiophile market. It incorporates several features derived from the company's professional CD player: the analog output amplifiers are encased in metal for reduced noise, the power supply is located and shielded for low hum radiation, the de-emphasis circuits use mica capacitors for added stability and accuracy, and conservatively rated metal-film resistors are used for low noise and low distortion. The laser scanner is located on a doubly isolated subchassis for protection against physical shocks. Unlike Sony's first



CD player, the new model has a separate digital-to-analog converter system for each channel.

Programming and cueing facilities have been augmented with such features as a Random Music Sensor, Location Search, and Music Scan. Most of the front-panel functions are duplicated on the supplied wireless remote-control unit. There is also a headphone jack. A multifunction fluorescent display shows track number, index number, elapsed time, and time remaining on the disc. An additional bar-graph display is said to provide a sense of playing location similar to that available with analog discs. The player is styled to match Sony's other ES Series products.

Specifications include a frequency response of 5 to 20,000 Hz ± 0.5 dB, harmonic distortion of less than 0.003 per cent at 1,000 Hz, dynamic range of more than 95 dB (1,000 Hz), and channel separation at 1,000 Hz of more than 90 dB. Dimensions are 17 x 4 $\frac{1}{4}$ x 15 $\frac{1}{4}$ inches; weight is 25 $\frac{1}{2}$ pounds. Price: \$1,500.

Circle 120 on reader service card

Technics Digital Adaptor Allows 6-Hour Recording

□ Designed to match the dimensions and appearance of home hi-fi equipment and video-cassette recorders (VCR's), the Technics SV-110 digital-audio adaptor turns any home VCR (Beta or VHS formats) into a

digital-audio recorder. When it is used with a VHS deck in the SLP (Super Long Play) mode, up to six hours of continuous playback or recording are possible on a T-120



tape. The adaptor encodes stereo audio as a video/digital signal according to the EIAJ STC-007 standard for fourteen-bit quantization. Tapes made with this adaptor are compatible with any STC-007 adaptor.

The SV-110 can be connected to two VCR's at once for digital dubbing, which produces an exact duplicate with no loss in sound quality. Front-panel facilities include a pair of two-color fluorescent level indicators with peak-hold capability; one of them can also be switched to show VCR tracking quality. There is a single record-level control and a balance control to adjust each

channel's relative level. A playback-mute switch permits cue-and-review monitoring in various VCR search, slow-motion, and still-frame playback modes. There is a front-panel headphone jack with separate volume control.

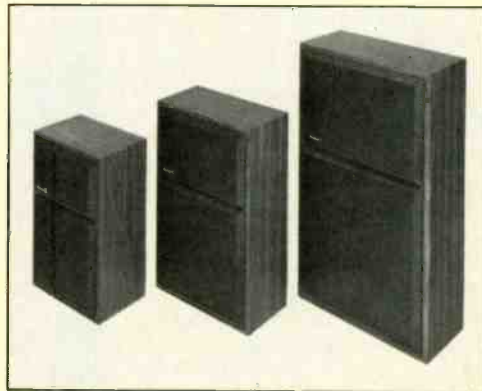
Frequency response is given as 2 to 20,000 Hz ± 0.5 dB. Harmonic distortion is less than 0.01 per cent at a 0-dB recording level with a 1,000-Hz signal. Dynamic range is more than 86 dB. Dimensions are 16 $\frac{5}{16}$ x 21 $\frac{1}{16}$ x 13 $\frac{2}{32}$ inches; weight is 13 $\frac{3}{4}$ pounds. Price: \$800.

Circle 121 on reader service card

AudioSource Equalizer For Personal Stereos

□ AudioSource's EQ-Three five-band equalizer provides stereo frequency-response modification of ± 10 dB in bands centered at 60, 250, 1,000, 3,500, and

Allison's Floor-Standing "Bookshelf" Speakers



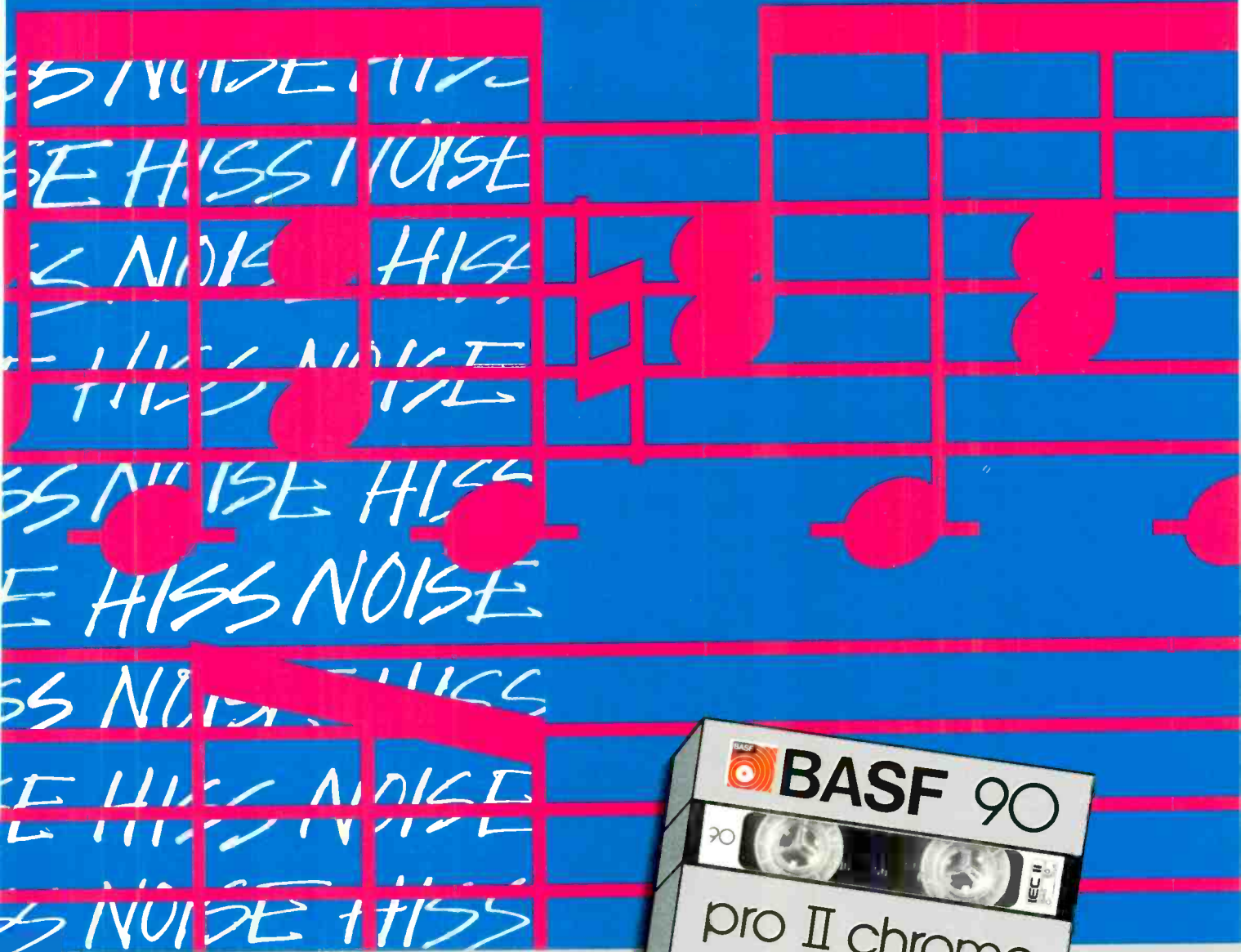
□ Acknowledging that most "bookshelf" speaker systems end up placed on the floor, Allison Acoustics has taken the obvious but unprecedented step of designing several two-way bookshelf-sized speakers that are intended to perform optimally when standing on the floor. The "room-matched" design of the Allison Models 110, 120, and 130 speakers (left to right in photo) is intended to produce a uniform power output in the typical listening environment. All three models use Allison's ferrofluid-damped 1-inch convex-diaphragm tweeter for wide dispersion at the highest frequencies and flat power output without on-axis beaming.

The smallest system, the Model 110, has an 8-inch woofer and measures 18 x 11 $\frac{1}{2}$ x 7 $\frac{1}{2}$ inches. Next up in size, the Model 120 also has an 8-inch woofer but

measures 21 $\frac{3}{4}$ x 13 $\frac{3}{4}$ x 7 $\frac{1}{2}$ inches. The largest system, the Model 130, has a 10-inch woofer and measures 29 $\frac{1}{8}$ x 16 $\frac{1}{2}$ x 8 $\frac{1}{4}$ inches. All three speakers have a crossover frequency of 2,000 Hz and crossover networks using air-core chokes and computer-grade nonpolarized capacitors. Speaker impedances are all nominally 6 ohms with a 4-ohm minimum. Low-frequency -3-dB points for the Models 110, 120, and 130 are 46.5, 41, and 35.5 Hz, respectively. System weights are 16 $\frac{1}{2}$, 21 $\frac{1}{4}$, and 34 $\frac{1}{2}$ pounds. Sensitivity is given as a 90-dB sound-pressure level at 1 meter with a 2.83-volt input level. Recommended amplifier power is 15 to 150 watts per channel. Finish is walnut-grain vinyl. Prices: Model 110, \$260 per pair; Model 120, \$320 per pair; Model 130, \$195 each.

Circle 122 on reader service card

HEAR ALL OF THE MUSIC AND NONE OF THE TAPE...



SWITCH TO BASF CHROME AUDIO TAPE

THE WORLD'S QUIETEST TAPE

If you won't settle for anything less than pure music, accept nothing less than BASF Pure Chrome audio tape. Unlike ferric oxide tapes, BASF Pure Chrome is made of perfectly shaped chromium dioxide particles. And that exclusive Chrome formulation delivers the lowest background noise of any tape in the world, as well as outstanding sensitivity in the critical high frequency range. And this extraordinary tape is designed especially for the Type II Chrome Bias position. So make sure you're hearing all of the music and none of the tape. Make the switch today to the world's quietest tape. BASF Chrome.

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Winston. America's Best.



Join the first team.
Reach for Winston.



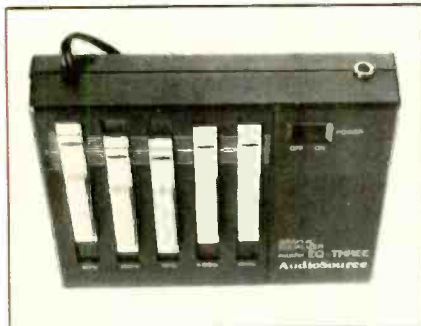
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Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

9 mg. "tar", 0.8 mg. nicotine av. per cigarette by FTC method.

New Products

10,000 Hz for personal stereo systems. The unit plugs into the headphone jack of the portable component, and the headphones



are then plugged into the EQ-Three. The slide controls have click detents at their 0-dB positions. The EQ-Three uses two AA cells (supplied). Price: \$39.95. Audio Source, Dept. SR, 1185 Chess Drive, Foster City, Calif. 94404.

Circle 123 on reader service card

Wide Dynamic Range in Adcom Preamplifier

Adcom's GFP-1A preamplifier has a special input for use with digital Compact Disc players and the new high-fidelity sound systems in video-cassette recorders. The input's extremely low noise level and 10-volt-plus clipping point are said to insure a dynamic range of more than 110 dB. Separate input and recording selector switches can make the GFP-1A operate as two separate preamps. For example, the selector switches together with the unit's dual phono-input circuits permit listening to one



turntable while taping another disc on a different turntable. The phono-input sections employ selected resistors, polystyrene capacitors, and gold-plated input jacks. The design conforms to the new RIAA specifications for phono response and includes an infrasonic filter. Phono-section overload exceeds 315 millivolts. There is capacitive cartridge-load switching, and one of the phono preamps is switchable for use with very-low-output cartridges.

Other features include a CX-disc decoder, a headphone output with separate volume control, detented bass and treble controls with no effect on the midrange, a tone-control bypass switch, switchable infrasonic and ultrasonic filters, a mono switch, and a

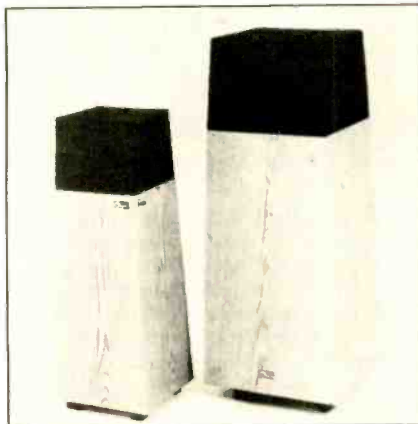
loudness switch. Connections and switching for two tape decks are provided.

Frequency response is 20 to 20,000 Hz ± 0.25 dB with a total harmonic distortion of less than 0.007 per cent. The infrasonic filter has a -3-dB point of 20 Hz and a 12-dB-per-octave slope. The ultrasonic filter has its -3-dB point at 25,000 Hz and rolls off at the same rate. Deviation from the RIAA curve is within ± 0.5 dB. Dimensions are 19 x 3 x 12 1/2 inches. Price: \$375.

Circle 124 on reader service card

Ohm Acoustics Has New, Larger Speaker

The Ohm Walsh 4 loudspeaker (right in photo) is nearly twice the size of the original Ohm Walsh 2 (shown at left), and it is said to have four times the high-frequency headroom as well as substantially deeper



bass response. The main Walsh driver, which handles all frequencies except the very high ones, has an extra-large diaphragm. The rated power-handling capability is 500 watts. The unit features a mid-range balance circuit that enables the user to vary the apparent position of the mid-range output.

The Ohm Walsh 4 measures 15 1/2 inches square at the bottom and tapers to 12 inches square at the top. It is mounted on casters for easy positioning; total height, including the casters, is 41 inches. It is available in oak or walnut finishes. Price per pair: \$1,500. Ohm Acoustics, Dept. SR, 241 Taaffe Place, Brooklyn, N.Y. 11205.

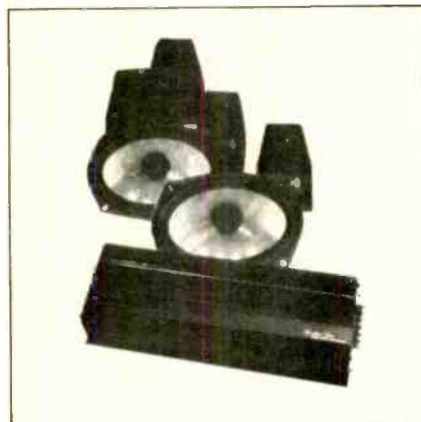
Circle 125 on reader service card

American's Car Systems Are Dealer-Equalized

American Research and Engineering's K40 Sound System and K40 Signature Series Sound System can be installed in almost any car and work with any generally available radio/cassette unit. According to the manufacturer, two years were spent analyzing the acoustic environments of American, Japanese, and German cars in order to design an integrated speaker-amplifier system with a dealer-adjustable equalizer that could deliver optimal sound in each car. Speaker locations are specified for optimal imaging and to eliminate the need for metal cutting and door-panel modifications. The amplification has a built-in

30 per cent overload factor at a 107-dB sound-pressure level. Dealer installation time is said to be less than two hours.

The K40 Sound System has six speaker units and a total rated power-handling capability, including the subwoofer, of 120 watts with 0.1 per cent total harmonic dis-



tortion. It includes a 40-watt subwoofer amplifier, a music detection and turn-on circuit, and an FM signal-source enhancement circuit.

The K40 Signature Series system (shown) uses eight speakers and has 160 watts total power-handling capability (both channels plus subwoofer) with 0.05 per cent total harmonic distortion. It also includes a music detection and turn-on circuit and an 80-watt subwoofer amplifier. Prices: K40 Sound System, \$599; K40 Signature Series Sound System, \$899. American Research and Engineering, Dept. SR, 1500 Executive Drive, Elgin, Ill. 60120.

Circle 126 on reader service card

Maxell Upgrades Two Cassette Tapes

Although retaining the same designations as their predecessors, Maxell's new XLI-S and XLII-S cassettes (normal and high-bias, respectively) are said to incorporate improvements in both the size and shape of the tape's magnetic particles and in the cassette mechanism. Changes in the



coating formulation involve a proprietary epitaxial process that produces cobalt-encapsulated ferric-oxide particles much smaller and more uniformly sized and shaped than in previous versions of the tape. The improvements allow the particles to be packed more densely and uniformly in the tape coating, yielding a 1.5-dB improvement in signal-to-noise ratio, a 1-dB reduction in noise in the critical 2,000- to 10,000-Hz region, and a 2-dB improvement in high-frequency output.

Mechanical improvements include a new slip sheet with hexagonal embossing to re-

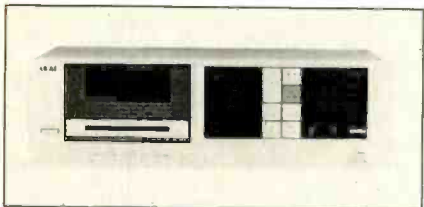
New Products

duce contact with the tape while maintaining winding accuracy, a new pressure pad, more "finely tuned" tape rollers, and more accurately matched shell parts. The packaging has also been redesigned as part of a restyling of the entire Maxell cassette line. Prices for both XLI-S and XLII-S: C-60, \$5.29; C-90, \$7.29.

Circle 127 on reader service card

Akai's Programmable Compact Disc Player

□ Akai's CD-D1 Compact Disc player enables the user to program up to twenty-four selections for playback in any order. Advanced cueing functions include time



and index search. The unit can also skip immediately to the previous or next selection on a disc, and it has pause control, fast forward and reverse, phrase-repeat, and selection-repeat functions. It is programmed on a numerical keypad, and there are front-panel displays of the selection number, the track or index number, the elapsed time, and the laser pickup's position. The player incorporates a digital oversampling filter that converts the Compact Disc signal, encoded at a 44.1-kHz sampling rate, into one encoded at a 176.4-kHz rate. The filter then removes ultrasonic components from the encoded signal. This digitally filtered signal is converted to analog audio voltages, which are filtered by a third-order Bessel filter.

Specifications include a frequency response of 20 to 20,000 Hz ± 0.5 dB and a signal-to-noise ratio, dynamic range, and channel separation that are all 90 dB or better. High-frequency distortion is 0.005 per cent. Output level is 2 volts (rms) at 100 per cent digital modulation. Play-start time is about 2 seconds; random-access time averages 3 seconds. Dimensions are 17 $\frac{1}{4}$ x 5 $\frac{1}{3}$ x 12 $\frac{1}{2}$ inches; weight is 16 $\frac{1}{4}$ pounds. Price: \$1,000.

Circle 128 on reader service card

Carver Add-On Component Reduces Stereo-FM Noise

□ Designed to be used with any stereo FM tuner or receiver, the Carver TX1-11 add-on FM decoder is said to reduce multipath noise and distant-station hiss dramatically. The TX1-11 is rated to deliver a 20-dB im-

provement in stereo signal-to-noise ratio and a 10-dB improvement in multipath rejection, and, according to Carver, it maintains space, depth, ambience, and full separation of stereo reception for weak or distorted FM signals. The TX1-11 measures 17 $\frac{3}{8}$ x 1 $\frac{3}{4}$ x 5 inches and is connected in a



tape-monitor or external-processor loop of a receiver or amplifier.

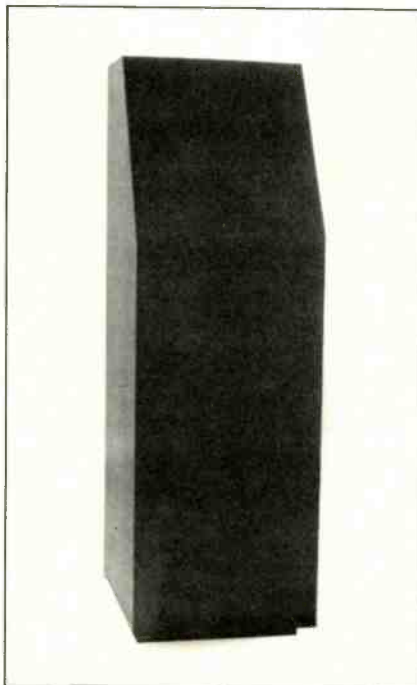
Frequency response is given as 5 to 60,000 Hz ± 0 , -3 dB. Total harmonic distortion is 0.05 per cent from 20 to 20,000 Hz. Intermodulation distortion is also 0.05 per cent. Separation is greater than 30 dB from 20 to 20,000 Hz. Front-panel controls include bypass, tape-monitor, and noise/multipath-reduction switches. The back panel has a threshold-setting control. The unit cannot reduce noise or multipath distortion of a mono FM signal. Price: \$250.

Circle 129 on reader service card

Floor-Standing Speakers From Snell Acoustics

□ The Type C floor-standing speaker system from Snell Acoustics has three front-mounted drivers and a rear-firing super-tweeter. The sloped baffle for the midrange driver and front tweeter is intended to minimize the audible effects of cabinet-edge diffraction and floor reflections and to increase the accuracy of the first sound arrivals at the ear.

The drivers include a 10-inch long-throw woofer, a 4-inch midrange, and two $\frac{3}{4}$ -inch ultra-low-mass soft-dome tweeters. Crossover frequencies are 450 and 3,500 Hz, and 15,000 Hz for the rear tweeter. The crossovers in each system are individually ad-



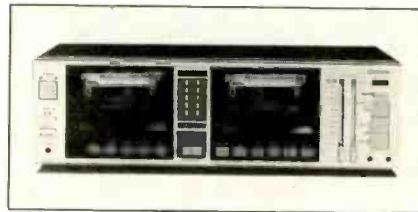
justed under dynamic operating conditions to the characteristics of the drivers used in order to assure uniform response from

right- and left-channel speakers. Frequency response is given as ± 1.25 dB from 35 to 22,000 Hz. Sensitivity is rated as 89 dB sound-pressure level at 1 meter with an input of 2.8 volts of pink noise. Nominal impedance is 4 ohms; maximum power-handling capacity is 400 watts per channel. The Type C measures 13 x 15 x 44 inches and weighs 80 pounds. Its cabinet is finished in matched oak or walnut veneers. Price: \$1,490 per pair. Snell Acoustics, Inc., Dept. SR, 143 Essex Street, Haverhill, Mass. 01830.

Circle 130 on reader service card

Two Dubbing Cassette Decks from Fisher

□ Fisher's new CRW40 (shown) and CRW77 cassette decks have dual transport systems for use in dubbing one cassette to another. One transport in each deck is for



either recording or playback, and the other is equipped for playback only.

The CRW40 has a synchronous one-touch dubbing control to ensure that both cassettes start at the same time, Dolby-B noise reduction, and a continuous-playback feature (as one tape finishes playback, the other begins). Other features include light-touch controls, tape-selector switches, five-segment LED record-level indicators, microphone inputs, and a headphone output. Along with many of the same features as the CRW40, the CRW77 also offers Dolby-C noise reduction, an Auto Search function for locating dubbing selections on a tape, and high-speed dubbing capability.

Wow-and-flutter for both models is given as 0.06 per cent (wrms). Frequency response extends to 14,000 Hz with normal-bias tape and to 15,000 Hz with chrome and metal tapes. Dimensions of the CRW40 are 15 $\frac{3}{4}$ x 4 $\frac{3}{4}$ x 11 $\frac{1}{16}$ inches; the CRW77 measures 15 $\frac{3}{4}$ x 4 $\frac{3}{4}$ x 10 inches. Prices: CRW40, \$199.95; CRW77, \$249.95.

Circle 131 on reader service card

Sansui Tuner Receives Stereo AM and FM

□ The Sansui TU-S77AMX digital-synthesis AM/FM tuner is capable of receiv-



ing stereo AM broadcasts in all four FCC-approved systems. The tuner senses which system is being used and automatically switches to receive the broadcast in stereo. General AM reception quality is also said to be greatly improved by the use of a PLL synchronous detector instead of a conven-

Four new ways to improve your hearing by TEN.

Last year, TEN's audio engineers were given a challenge: develop a new car stereo.

The ground rules: deliver exceptional autosound and deliver it at an affordable price. An exceptionally affordable price.

They delivered. Only four times better.

Presenting four exciting new auto-reverse cassette stereos by TEN. The CM-6430, CM-6530, CE-4431 EX2, and CE-4432.

Products of intensive research and advanced micro-processor memory technology. Technology, developed by Fujitsu Ltd., second largest producer of computers in the world.

For trouble-free tape playback, both the CM-6430 and CM-6530 have a soft-load transport system that carefully handles precious cassettes. Plus two TEN exclusive features: an Anti-Roll Mechanism that keeps tapes from rockin' when there's a whole lotta shakin' going on. And Hall Effect

End-Of-Tape Sensors that makes sure favorite recordings don't become dinner for your deck.

The CE-4431 EX2 and CE-4432 gives you amazing digital electronic tuning. Zero in on stations with pinpoint accuracy. Recall them with a push of a soft

touch pre-set button. If you don't like what you're hearing, call up the next station with search tuning.

And a four-steps have line outputs, which lets you easily expand your system at any time.

So, if you want high performance car audio, without the high price tag, open your ears to the four new ones by TEN.

MODELS—(Clockwise from left) CM-6430, CE-4432, CM-6530, and CE-4431 EX2.

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TEN CAR AUDIO
The best sound on wheels.

CIRCLE NO. 2 ON READER SERVICE CARD



SOLUTION.

Dear Bob Carver,

I bought a tuner four weeks before you introduced your TX-11 tuner. Now that I've read the AUDIO, STEREO REVIEW and HIGH FIDELITY reviews and have heard a demo at my audio dealer, I could kick myself. Couldn't you please put that special FM noise reduction circuit into an add-on unit? By the way, I have the C-4000 with Sonic Holography and your M-1 5t and I love them.

"Pleading in Suburbia"

Dear Bob Carver,

I am satisfied with my present receiver except when I try to listen to FM. The stations in this city are fantastic but the noise from multipath interference makes stereo listening almost impossible for me. However, several friends in my building have your TX-11 tuner and they get beautiful stereo FM reception. Is it possible for you to build your special FM circuit as a separate device so receiver owners can benefit from your technology, too?

"Hoping in Manhattan"

Dear "Pleading" and "Hoping."

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Bob Carver



TX1-11

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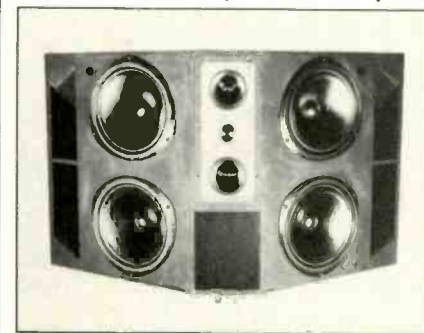
New Products

tional envelope detector. The new detector rejects interference and distortion, improves signal-to-noise ratio, and extends frequency response. Additional features include digital frequency display, presets for eight AM and eight FM stations, preset scan, and wide/narrow i.f. bandwidth selection. Price: \$400.

Circle 132 on reader service card

KEF's Ultra-Large, Self-Amplified Speaker

□ The KEF KM1 Monitor was designed in response to a request from the BBC for a loudspeaker able to reproduce high sound-pressure levels without sacrificing sonic accuracy. It features an integral power amplifier with a maximum output exceeding 1,200 watts. The amplifier has two power



supplies and eight separate output-circuit sections to feed the system's seven drivers. The crossovers are also active circuits with their own power supply.

The speaker has a soft-clipping limiter that is automatically activated under conditions of near-continuous peak overloading. The soft clipping permits up to a 6-dB increase in perceived loudness without significant audible distortion. Full electronic overload protection safeguards all the drive units and electronic circuits against accidental damage. Although intended initially for use in pop-music studios, the KM1 is said to achieve such a high level of sound quality that it can be used for monitoring live classical music, especially in digital recording sessions.

The KM1's maximum output is 120 dB sound-pressure level on program peaks under typical listening conditions. Second- and third-harmonic distortion measured at a mean sound-pressure level of 96 dB under anechoic conditions is less than 1 per cent from 20 to 20,000 Hz. Rated frequency range is 30 to 20,000 Hz ± 2 dB. Since it is a self-amplified system, the input impedance is the same as for an amplifier, 20,000 ohms. The driver complement is four 11 $\frac{3}{4}$ -inch Bextrene-diaphragm woofers, two 4 $\frac{1}{4}$ -inch Bextrene-diaphragm midrange units, and one 2-inch Mylar-dome tweeter. The

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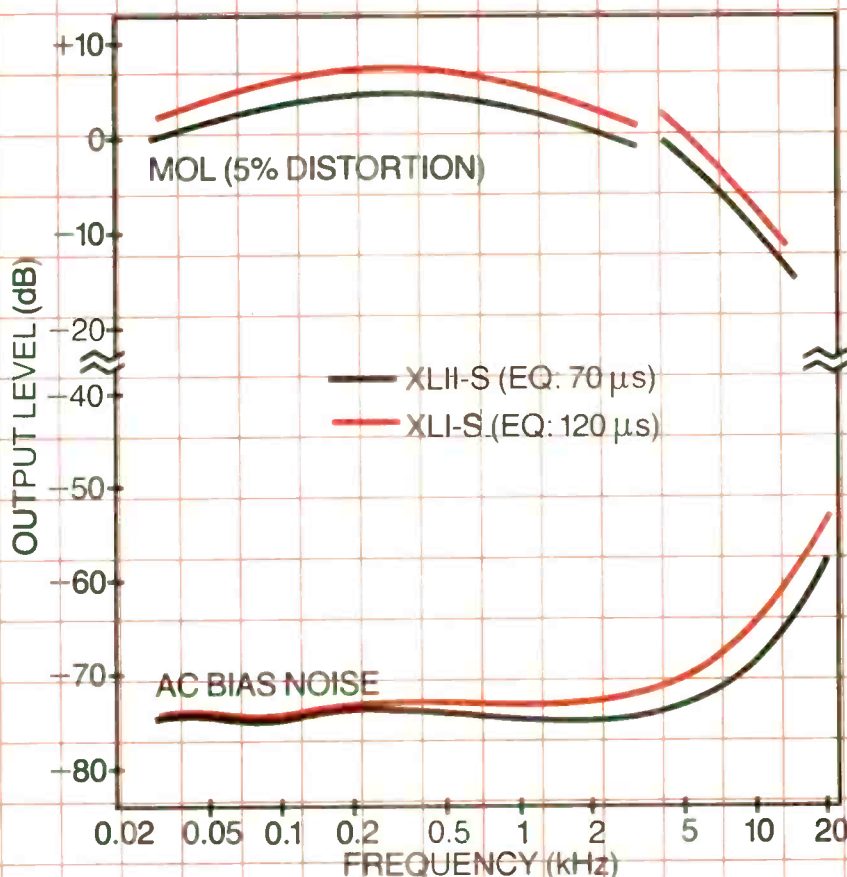
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 COATING THICKNESS: 10-11A (1A = 1/10,000,000 mm)



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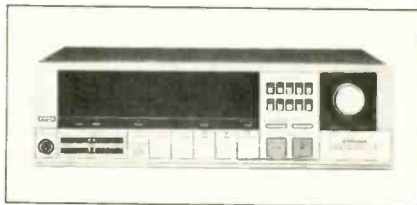
New Products

midranges and the tweeter are cooled by magnetic fluid. All drivers are selected to close tolerances and matched in pairs by computer. Enclosure dimensions are 30½ x 52¾ x 26 inches; weight is 264 pounds. The system is available in a variety of finishes with customized mounting arrangements on special order. Price per pair: \$25,000 unmounted as shown, more depending on mounting and finish.

Circle 133 on reader service card

Pioneer's New Line of Digital Receivers

Pioneer's new SX-40, SX-50, and SX-60 AM/FM receivers all feature quartz-controlled PLL digital-synthesis tuning with station search and presets. All models are equipped with A/V (Audio/Video) switching inputs for high-fidelity sound from such sources as a television set, a



VCR, or a video-disc player. Another feature converts monophonic inputs, such as AM radio, to simulated stereo sound. The SX-50 also includes infrasonic filters, two tape monitors, power-level indicators, and adaptor jacks for stereo AM. The top-of-the-line SX-60 (shown) offers a moving-coil-cartridge pre-preamplifier and ten AM and ten FM station presets.

Rated power output for the SX-40 is 38 watts per channel into 8 ohms from 20 to 20,000 Hz with no more than 0.02 per cent total harmonic distortion (THD); for the SX-50 it is 50 watts per channel into 8 ohms from 20 to 20,000 Hz with no more than 0.02 per cent THD; and for the SX-60 it is 80 watts per channel into 8 ohms from 20 to 20,000 Hz with no more than 0.005 per cent THD. The SX-40 and SX-50 measure 4¾ x 16½ x 12¼ inches. The SX-60 measures 5⅛ x 16½ x 14¾ inches. Prices: SX-40, \$300; SX-50, \$375; SX-60, \$500.

Circle 134 on reader service card

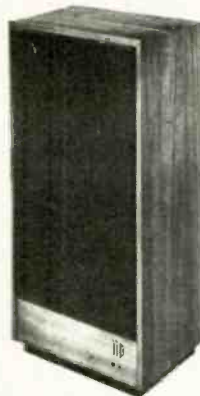
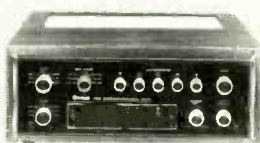
NOTE: All product descriptions and specifications quoted in these columns are based on materials supplied by the manufacturers, who will respond directly to reader requests for further information.

Domestic inflation and fluctuations in the value of the dollar overseas affect the price of merchandise imported into this country. Please be aware that prices quoted in this issue are therefore subject to change.

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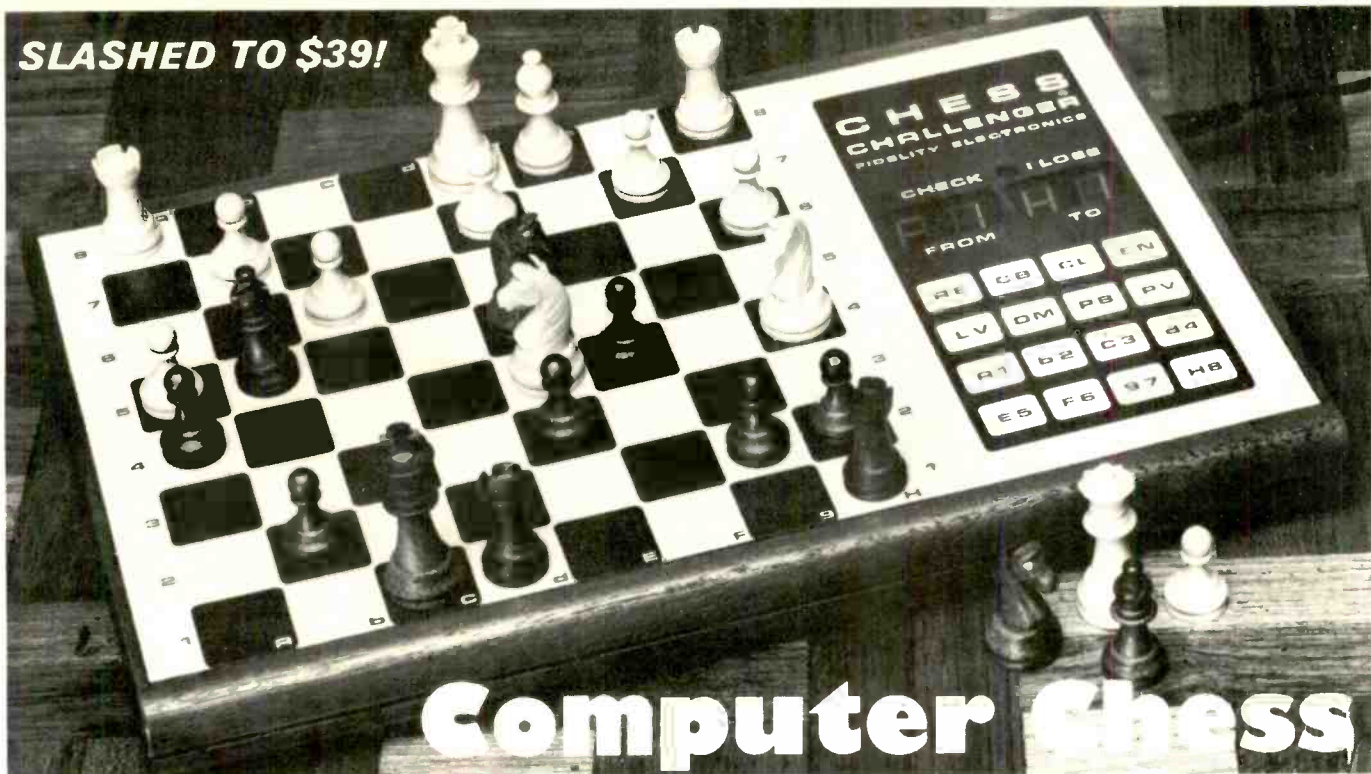
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It's you against the computer. Chess comes alive with this awesome space age computer opponent.

You'll be challenged by 7 levels of difficulty and a program that can actually analyze over 3,024,000 board positions. So, you had better come out fighting.

The only thing you won't have to fight about with this computer is the price. We've already chopped Fidelity's \$115 price down to just an incredible \$39.

March 1983 Dealer Price List

NAME	MODEL #	PRICES PER MASTER PACKAGE	MASTER PACKAGE PRICE	800 LIGHT BUNDLE PRICE	SUGGESTED RETAIL PRICE
CHESS CHALLENGER	BCC	10	\$ 85	\$ 75	\$ 115

SIMPLE TO USE

Notice that I said, "Simple to use," not simple to beat. Using this computer is incredibly easy. You don't even have to tell the computer which piece to move.

Just tell the computer which square you want to move from and to. The computer knows the exact location of every piece on the board, so it automatically knows what piece you are moving.

When the computer wants to move, it shows you the square it wants to move from and the square it wants to move to, on its 'From/To' LED display.

It's simple. It's easy. And, best of all, it lets you concentrate on your game, not on how to use the computer.

OUTSMART THE COMPUTER

Even at level one you may need help beating this super smart computer.

There's help. Just touch a button, and the computer will join your team. He will pick your best possible move. A second button touch will send him back to his own side to pick his best response.

You can cheat. Let's say you make a really dumb move. After you see what

the computer does (horrors, he's taken your man), all is not lost.

If you're the type of person who says, "If I only had my Queen back, I could beat this thing," no problem. You can add back in any piece, anywhere.

And, that's not all. Not only can you add back in any piece you've lost, you can take any of the computer's away. So, you can get rid of a pesky Bishop, Knight or even a Queen.

But there are limits. This computer won't let you make an illegal move. And, it won't make any illegal moves itself.

There's more. The computer has a broad vocabulary of chess master book openings such as: Sicilian, Ruy Lopez, or Queen's Gambit Declined. Plus, you can set up any classic chess game in mid-play and see how you would do.

It does everything a real chess master would do. It castles, it has pawn promotion and en passant. So, best of luck.

I can't beat this computer at level 3 which it calls its 'advanced level'. And, I don't even want to talk about my games at its level 7 'tournament level'.

WOW, IT'S REAL CHESS

But, when all is said and done, playing chess is what it's all about. And this game is very smart, very tough, but incredibly easy to use.

It is full sized, measuring 12 1/2" wide, 8" deep and 1" high. It comes complete with regulation Staunton design magnetized chess pieces. And, it simply plugs into any standard wall plug.

It's made in the United States (isn't that a change) by Fidelity Electronics. They are the largest and best known of the chess computer manufacturers. And, it's backed by their limited warranty.

SO WHY IS IT SO CHEAP?

Fidelity is in the forefront of new chess technology. Their new line has a new cosmetic look and a new way of entering 'your' moves into the computer called sensory (the computer moves are still the same, they're shown on a display or with lights).

The new system doesn't make the computer any smarter, but since this computer doesn't look like the rest of their line, they sold all 16,000 of these smart but nonmatching computers to DAK for cash. So, you'll save a bundle.

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If you like a challenge and your ego is strong enough to withstand losing to a computer, why not play just one game.

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Tape Talk

By Craig Stark



Channel Separation

Q. Why doesn't STEREO REVIEW print channel-separation measurements in cassette-deck test reports? It seems to me that the stereo effect (which I find greatest when listening through headphones) depends on good channel separation, so this should be a serious consideration in choosing a deck. Is there an audible difference between separation figures of, say, 46.5 and 53.75 dB?

KEN BOUTHOT
Auburn, Mass.

A. In the early days of stereo recording (the late Fifties and early Sixties, before there even were any cassettes), there was a problem in designing tape heads so as to prevent left-channel signals from being coupled, inside the tape head, to the coil windings for the right channel (and vice versa). This effect was most severe during recording because of the presence of the large ultrasonic bias current. Since such interchannel leakage threatened stereo separation, the quarter-track 1/4-inch open-reel stereo format was standardized using alternate pairs of tracks (one and three, two and four) instead of adjacent ones for the two sides of the tape. As a result, in this format there is a space of 0.093 inch between the left- and right-channel signals both on the tape and in the head windings. Head designs have improved dramatically since then, however, and today's cassette decks can maintain adequate stereo separation even with adjacent left and right tracks physically separated by only 0.014 inch.

How much channel separation is adequate? While many manufacturers don't even bother to list this specification any more, the worst channel-separation specs I've seen recently have been about 35 dB, and the higher numbers you cite are probably more typical. If you compare cassette decks with phono cartridges and FM tuners, I think you'll find that well-designed products in these categories generally offer from 30 to 40 dB of separation, which I consider quite adequate. You may be sure, however, that if we have occasion to report on a deck whose channel separation is low enough to degrade the stereo image audibly, we will mention that fact.

In any case, you should bear in mind that the kind of channel separation you get when listening through headphones to any but true binaural recordings is actually unrealistically excessive. (A binaural recording is made with microphones placed to simulate the position and spacing of human ears.) When you use most headphones you do not actually get the same stereo image the musicians and recording engineers sought to create. That is why some headphones (and accessory devices) actually reduce channel separation by partially blending the signals, thereby yielding a more realistic sound.

Recalibrating Dolby?

Q. What kind of calibration has to be done to keep Dolby-B from wiping out the high frequencies? My Technics RS-276 deck was a top-of-the-line model when it was new, seven years ago, but tape formulations have changed so much that none of those listed in the manual are on the market any more. Should I have my dealer set my deck up for a specific tape and use only that? Can I then play my old tapes properly?

JOHN R. SKRIPAC
Littleton, Colo.

A. A little checking showed that your deck was rated originally to have a frequency response (± 3 dB) out to only 13,000 Hz with chrome tape, 12,000 Hz with ferric. If now, some seven years after you bought it, you don't get all the highs when you dub new discs or top-quality open-reel tapes, the problem has nothing to do with Dolby! Besides, Dolby-B (like other noise-reduction systems) is designed to lower high-frequency noise (hiss, mainly). The absence of this noise may be perceived by someone who is used to hearing it as a loss of high frequencies from the music even though no such loss has actually occurred.

Dolby-calibration facilities are not normally included on the front panels of today's cassette decks because a home user without the proper instruments can inadvertently introduce decoding errors greater than those for which he is trying to compensate. Decks that have a Dolby-calibration

facility come with calibrated tone generators to compensate for differing tape sensitivities. As a rule, however, most of today's tapes are extremely close in sensitivity, though this was not necessarily the case when you bought your machine. If you are determined to keep your present deck, have a technician align it for a current brand of high-quality tape. Tape-sensitivity differences of less than 2 dB won't generally cause any audible mistracking, so unless you recorded a lot of your old tapes with hit-or-miss calibration adjustments, the odds are good that you'll still be able to hear whatever highs are there.

Head Replacement

Q. I own a ten-year-old Uher-Royal 784E tape deck whose record and playback heads are now worn out. Can you advise me where I can get new ones and perhaps suggest a service center that specializes in tape-recorder repairs?

P. S. HIND
Venice, Fla.

A. Ordinarily, I'd suggest getting in touch with the manufacturer of your machine, but as the company in question seems to have ceased U.S. operations, I suggest that you write to the Nortronics Co., Inc., 8101 Tenth Avenue North, Minneapolis, Minn. 55427. They make an extremely wide range of replacement heads and can probably meet your needs (include the name and model number of your deck).

Installing the new heads is a task best left to professionals who have both the experience and the specialized equipment necessary. It should be within the competence of any good stereo dealer's service technician, however, and I'm sure that within the area where you reside you should be able to find reliable assistance.

High-End Clarity

Q. I'm absolutely in love with high-frequency clarity in my recordings. Can it be improved by recording on metal tape with normal (ferric) bias and EQ?

TEE ADELAJA
Morgantown, W. Va.

A. No way! While you may get lots of highs, the distortion caused by trying to record metal tape with ferric bias will be unbearable—try it and see. Once you have recorded a metal tape using the proper setting, however, you can (artificially) boost the high end by playing it back using the ferric switch position. This will give you a boost of about 4 dB, starting a little above 1 kHz and continuing on up. That will cost you by correspondingly increasing tape hiss by the same amount, but maybe you'll think the result is worth it. Certainly you won't hurt anything by trying. □

Because the number of questions we receive each month is greater than we can reply to individually, only those letters selected for use in this column can be answered. Sorry!

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CIRCLE NO. 10 ON READER SERVICE CARD

Car Stereo

By Christopher Greenleaf

PRODUCTS AND TRENDS AT THE SUMMER CES

THE large and very diverse car stereo section at this summer's Consumer Electronics Show in Chicago made at least two things very clear. First, despite the considerable differences between the home and mobile listening environments, increasingly sophisticated and demanding consumers have led the car stereo industry to offer features and performance more and more comparable with those of home hi-fi components. Second, car stereo is no longer the exclusive province of the specialist manufacturers. It seems as if nearly every company that has ever sold a transistor or a voice coil is now "serious" about car stereo—and with good reason. There is a lot of money being made in the field. In fact, some audio dealers have been carried through the recession by their car stereo business.

It should be reassuring to consumers that so much ingenuity, engineering skill, and audio experience is being lavished on making a moving vehicle a really satisfying place in which to hear recorded or broadcast music. The big question we heard everywhere at the CES, however, was: how many more companies can profit from car stereo before the already crowded field becomes glutted? Probably some of those showing extensive car stereo lines in Chicago

this year won't be in the car stereo business by next year's show. But, in the meantime, consumers can only benefit as the intense competition makes better products available at lower prices.

Some car stereo features are so nearly universal now that many companies don't even bother to mention them as a "feature," such as locking fast-wind modes on tape players or separate bass and treble tone controls (unless the unit is specifically designed for use with an outboard equalizer). The "feature" on some units is now a bass-contour control or switchable loudness compensation. And though there are still many units sold that lack noise reduction, those aimed at serious music lovers almost invariably have at least Dolby-B, with Dolby-C making an appearance on quite a few new tape players at the show. The dbx system was also well represented, both as a built-in feature and in add-on components. There were fewer introductions of DNR-equipped units than in previous years, but it is still popular because of its ability to reduce hiss in both tape and FM program sources without special encoding.

Digital frequency-synthesis tuning is becoming increasingly available in car receivers, and computer-controlled automatic

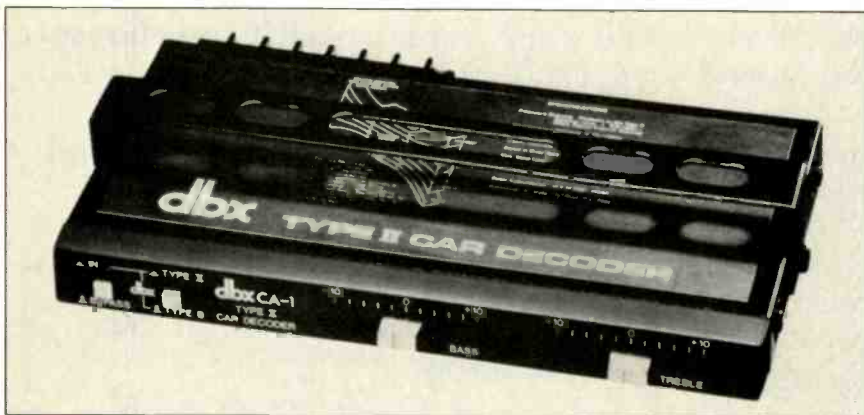
tuning and tape-selection functions continue to proliferate and improve. Auto-reverse mechanisms are also improving, with more players giving equal performance in both directions, and many units offer better FM sensitivity and multipath rejection.

There is still no clear victor in the battle to see which of the four competing formats for stereo AM broadcasting will win out. Jensen showed a prototype that received a Harris-type signal from a local station, and Sansui again demonstrated a receiver with a chip to decode all four types of signals. Sony is selling a similarly functioning portable with all-type stereo AM reception. This seems to be the logical approach for radio manufacturers until the broadcasters settle on a single system. But most companies and consumers remain confused and frustrated by the FCC's abdication of responsibility in the selection of a stereo AM system.

Even the better current car stereo "receivers" (AM/FM tuner, tape player, and integrated amplifier) may not provide enough oomph to satisfy consumer demands for more impressive sound levels, but the flurry of new external power amplifiers should let anyone who wants to blow his ears out do so. A number of the exhibitors at the CES could be easily located on the mammoth floor of McCormick Place by the periodic explosions of high-decibel sound from their custom-fitted demo cars.

Audiomobile, Kenwood, Philips, Rockford Fosgate, Yamaha, and one or two others showed amplifiers at or above the 100-watt-per-channel level, and new models offering more than 70 watts appeared in lines from Concord, Jet, JVC, Nakamichi, Sparkomatic, and some of the new specialist manufacturers. The list prices for add-on amplifiers with at least 50 watts per channel are rarely less than \$250, so extra power doesn't come cheap. But the potential improvement in performance, particularly when a booster amp is used with advanced noise-reduction systems and the latest speakers, is exciting enough to make it worthwhile for many buyers.

Most car speakers are still two-way designs, but there was a marked increase in three-way systems at the show. There were also subwoofer/satellite systems, and Alpine, Audiomobile, Becker, Cerwin-Vega, and Linear Power showed crossover circuits, from \$50 to \$225, to link the drivers in such systems or to link several extra drivers to a power amplifier. Speakers were available in sizes to fit virtually any possible location in a car or other vehicle. Subwoofers, for instance, can often take up a sizable part of a car's rear deck, but Linear Power has a \$200 Bass Vent model that can be mounted in a 6 x 9-inch opening. Large



The dbx CA-1 decodes cassettes encoded with either the dbx or "Type B" noise-reduction systems, and it has bass and treble slide tone controls too.

Grundig's GCE 9900 auto-reverse AM/FM receiver and tape player has digital-synthesis tuning and six station presets for each band.



woofers were included—usually with one or two upper-frequency drivers in a coaxial or three-way array or on a single mounting panel—in systems from Alpine, EPI, JBL, Jensen, Jet, Kenwood, Panasonic, Philips, Pioneer, Pyle, Sanyo, Sparkomatic, Sony, and Yamaha. Among the host of familiar home audio names entering the car field, AR, Boston Acoustics, Infinity, and Polk offered full-range car speakers.

In between the high-volume onslaughts, it was possible to hear some astoundingly good imaging, open-sounding bass reproduction, and unusually effective equalization in some of the demo cars. Audiomobile's demonstration of its dealer-adjusted amplifier/crossover system proved what everyone knows but some seem reluctant to admit: probably *the* most important factors in achieving high-fidelity sound in a car are the placement of the speakers and the equalization applied to *each* speaker. The contrast between good sound and appalling sound from the same equipment in the same car was enough to convince even some skeptics about the importance of careful installation and professionally adjusted equalization. American Research and Engineering showed a pair of their K40 series amplifier/equalizer/speaker systems, which they claim can do for any car what the Delco-GM/Bose Music System does for GM luxury cars.

For eager do-it-yourselfers, there was a surprising number of user-adjustable five- and seven-band equalizers available, and a couple of models even had nine bands. Alpine, JVC, and Yamaha showed versatile add-on equalizers that are intended for subtle rebalancing of an installed system to suit a particular listener's tastes.

Away from the show proper, there was Sony's "Magic Bus," a recreational vehicle fitted out with a variety of new audio gear and a systems-matching computer to control it all. The most interesting part of it, however, was a new twist on an old idea, diversity reception. Substantially better FM reception is possible if a vehicle has two separate antennas and the means to switch between them according to which is pulling in the stronger or clearer signal. Sony's new version is called the Diversity Antenna; a microprocessor samples both antennas' outputs and selects between them too quickly for the ear to notice any interruptions.

Blaupunkt and Grundig both demonstrated receiver/tape players with subcarrier-triggered automatic override circuits to receive broadcast traffic reports in certain metropolitan regions (yes, they can be switched off). These are doubtless only the first of many "traffic-smart" car stereos intended to help ease rush-hour congestion.

Theft is such a big worry for car stereo



Mitsubishi showed a prototype under-dash Compact Disc player installed in one of the company's Cordia automobiles.

owners that a whole segment of the market is devoted to foiling sticky-fingered "audiophiles" who covet their neighbor's expensive gear. One of the happiest solutions to the problem is called the Stereoschuttle (\$37.50 to \$57). It is actually two nesting boxes with mating sixteen-pin connectors; one box holds a car stereo unit that's wired into it, and the other is installed in or under the dash and wired into the rest of the system. When you leave your car, just slide out the box with the receiver/tape player and take it with you. (The concept is similar to Sony's Music Shuttle, the tape player of which can be detached from the car's built-in receiver and used with a battery module as a personal portable.) Various expensive, intricate, and ingenious alarm systems were also demonstrated at the show.

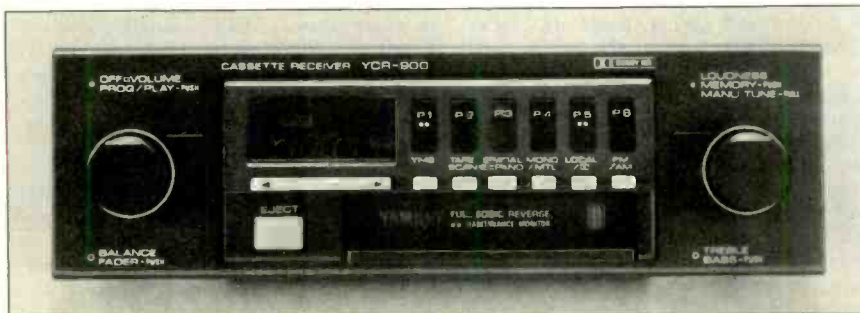
Single-brand car stereo systems are carving out a small but apparently secure niche

in the market. Still at the top in price is Nakamichi's Mobile Sound System, which includes a speaker pair, a tuner/tape player, and a power amplifier for about \$2,000. Alpine, Jensen, Pioneer, Sony, and others are also offering matched components that in some cases cannot easily be used with other manufacturers' products.

What about digital car stereo? Well, Mitsubishi installed a CD player in an expensive car, and it worked very well on the show floor, but no one is claiming that either the CD system or the prototype digital cassette systems (see "Audio/Video News," page 30) are anywhere near ready for ordinary road use. Hold onto your dbx- and Dolby-encoded tapes and make as many more as you want for your car, since it looks like several years at least before you'll have a better sound source for hi-fi listening on the road. □



Sansui's CX-990 tuner/tape player can decode stereo AM signals broadcast using any of the four systems currently allowed by the FCC.



Yamaha's YCR-900 receiver/tape player has a Spatial Expand feature to enhance stereo imaging in a car system.

Audio/Video News

By David
Ranada



DIGITAL-AUDIO CASSETTES

OVER the past couple of years there have been several demonstrations of prototype digital-audio cassette recorders, machines that could eventually give audiophiles a studio-quality recorder at a relatively low consumer price along with the convenience of a compact and inexpensive tape package. Even now, efforts are under way in Japan to establish digital-encoding standards for the new medium. The prototypes I have seen so far (from JVC, Pioneer, Sharp, and others) have all used a metal-particle tape the same size as that of a standard audio cassette, and they have been variously hampered by short playing times, insufficiently wide audio bandwidth, or a too-low signal-to-noise ratio.

Sony has taken an ingeniously different approach to these rather difficult engineering problems. At the International Conference on Consumer Electronics held after this summer's Consumer Electronics Show, the company announced its development of a digital-audio recorder that can record continuously for *three hours* on a cassette with overall size *one-half* that of an ordinary (analog) audio cassette. Although no demonstration of the device was given, Sony showed a picture of what I presume was a lab prototype. It seemed to be a very compact machine, no larger than an average hardcover James Michener novel. Sony has proposed its system as the digital-audio-cassette standard.

How do they do it? The key to any digital tape format is something called *recording density*, which simply means the amount of digital data (measured in bits) that can be stored on a given area of tape (by convention measured in square inches). Increasing the recording density permits the very large quantity of digital data generated by only two audio channels to be stored on a smaller amount of tape. Since audio cassette tape is very narrow (about $\frac{1}{8}$ inch wide), a higher recording density has previously been obtained by increasing the number of tracks in the digital cassette recorder's heads. In recording, digital data from two audio channels might be distributed over sixteen or thirty-two parallel tracks by using, for example, an advanced-technology thin-film recording head.

The new Sony approach increases the track density by sweeping two *single-track* heads across a slowly moving metal-particle tape in the "helical-scan" method used in *video* cassette recorders. Although the tape speed is only 6 millimeters (about $\frac{1}{4}$ inch) per second, since the heads are mounted on a spinning cylinder, or "drum," they record 2,300 tracks per inch, and each track is recorded with a linear bit density of about 52,000 bits per inch. The product of these two numbers is the recording density: an incredible 120 *million* bits of information per square inch. This density is from six to ten times higher than that yet obtained with various fixed-head digital-audio cassette recorders. The three-hour recording time of the Sony deck results from the slow tape speed. [For those of you interested in technical details, the system employs a 30-millimeter-wide head drum spinning at 1,800 rpm; the tape-wrap angle is 90 degrees. Each track is 23.5 millimeters long with an azimuth angle of 6.3 degrees and a pitch of 11 micrometers. The tape is the same overall width as in a normal cassette—3.81 millimeters—yet also holds linearly recorded auxiliary and control tracks. The cassette itself measures 65 x 48 x 10 millimeters.]

This format is specifically intended for digital audio; it is not a hybrid like digital audio tapes made with a VCR and a digital-audio adaptor. As a result, it has several advantages beyond the small size of the tapes and recorders. The digital audio information is formatted so as to allow such niceties as variable-speed playback, tape-copy editing (as is done with video tapes and professional digital-audio recordings), and rapid and precise digitally controlled cueing (the fast-forward and rewind speeds can be two hundred times the normal playback speed). The digital error-correction system has been designed so that an error concealment is likely to be required only once in every two days of playing time even if the "block error rate" is one out of one hundred (a fairly high figure). Sonically, the system records sixteen-bit-encoded audio signals using a 44.1-kHz sampling rate, implying that the recorder will be capable of a dynamic range greater than 90 dB, a flat frequency response out to 20,000 Hz, and distortion

below 0.01 per cent at full recording level.

To my mind, Sony's helical-scan system also has several important advantages over fixed-head machines. Perhaps the most important advantage is psychological: befitting the revolutionary nature of digital audio recording, the Sony system makes a clean and decisive break with previous analog recording technologies by abandoning the standard-sized audio cassette (while increasing the recording time) and the fixed-head methods so long the mainstay of analog recording (while gaining in operational flexibility). Psychology aside, the helical-scan system for digital audio can take advantage of the circuitry, manufacturing techniques, and—most important—the field experience developed through the manufacture and use of millions of helical-scan Beta and VHS video-cassette recorders. (It should be noted that whatever recording system is used for digital audio cassettes, the tape *cannot* be housed in a standard audio cassette shell. The tape in such shells is too exposed to damage from fingerprints and/or dust, damage that is not very audible in analog recordings but can be fatal to digitally encoded ones. Protective shells like those used for video cassettes will be necessary when mass production of digital audio cassettes begins.)

To semi-professional recording engineers and producers, the fact that digital editing was considered in the design of the system should be gladdening, as should the 44.1-kHz sampling rate and sixteen-bit resolution. If the announced sampling rate and resolution are carried through to the final production models, the Sony decks will be directly compatible (with a simple interface circuit) with digital Compact Disc mastering systems. If nothing else, the system may provide the first inexpensive and easy all-digital access to the digital-disc medium.

A digital audio cassette recorder may also provide a means to make digitally identical dubs of Compact Discs, a prospect currently worrying record-industry officials. At a recent meeting of the New York City chapter of the Audio Engineering Society, Marc Finer of Sony Corp. pointed out, however, that once portable and automotive CD players become available (probably before the digital cassette medium arrives), there will be less reason to make copies of CD's. Moreover, with CD's the home recordist cannot use the rationalizations of taping to prevent record wear or taping because of poor disc-surface quality, for the digital-disc system suffers from neither problem.

In other related digital-recording news, there have been recent efforts to standardize the CD system's extra data-carrying capacity for such things as text, lyrics, and other graphic information. At a private demonstration during the recent Consumer Electronics Show, Technics showed the result of some experimental efforts to encode TV pictures *along with music* on Compact Discs. While the pictures shown were necessarily still-frames and of no better than videogame-display quality, their demonstration certainly showed how important Compact Disc technology may become in future years. Once CD players get installed in cars, for example, there might be CD's encoded with nothing but road maps for display on a small video screen. □

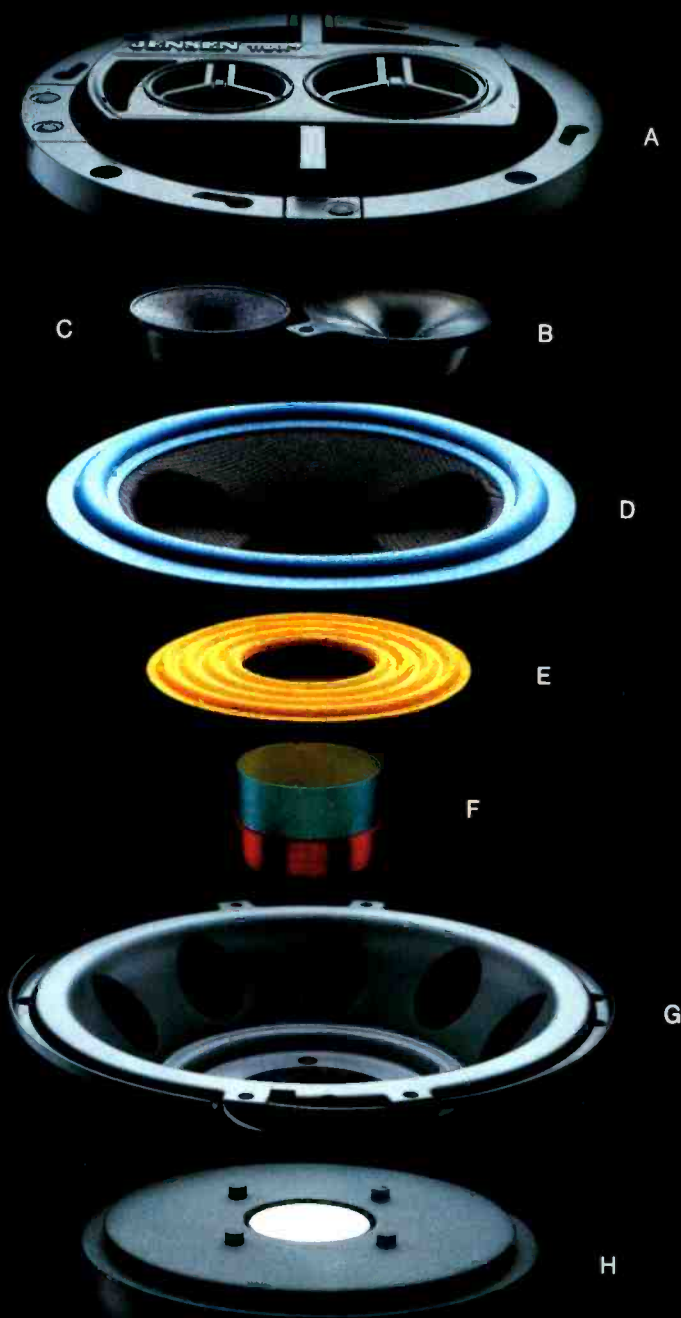


JENSEN

CAR AUDIO

Series 3000

Jensen Series 3000 Speakers



- A **Tweeter/Midrange Bracket**—Designed to give the tweeter and midrange proper baffling for maximum performance.
- B **Midrange**—The 6½" TRIAX (shown left) features a 2" piezoelectric midrange with a phenolic impregnated cone that smooths out the mid frequencies for a cleaner, richer sound.
- C **Tweeter**—The 6½" TRIAX (shown left) also features a 1½" piezoelectric tweeter that has no voice coil to burn out. Starts working at 6,000 Hz and keeps going to 40,000 Hz, well past the range of human hearing.
- D **Cone**—Molded from a new blend of polymer and cellulose called P28™. It has the strength of polypropylene but with the same low weight of paper, bringing excellent transient response, less distortion, and cleaner sound. P28 resists aging, cracking, heat, humidity and water.
- E **Spider**—Long excursion, high efficiency design for producing high volume levels with less distortion.
- F **Voice Coil**—Two layers of pure copper wire precision wound on a high temperature Nomex® bobbin for high efficiency and high power handling capacity.
- G **Housing**—Special design steel housing resists twisting and buckling and will keep all the parts of the loudspeaker in exact alignment even when mounted on an uneven surface.
- H **Magnet Assembly**—New strontium magnets offer 11% more useable power over that of other materials.

Other Features—Tweeter/Midrange wiring to main terminal connection is made without passing through the woofer cone. This allows the woofer to move more freely resulting in less distortion and higher acoustical efficiency. (6" x 9", 6½" TRIAX & COAX)

The grilles are acoustically transparent, perforated metal that is ultrasonically welded to the frame to prevent rattles. The 6½" and 4½" speakers also have a unique twist-lock feature that insures firm attachment to speaker and prevents them from falling off when installed in a door.

WARRANTY 2 FULL YEARS.

The exploded view (above) of the 6½" Triax® helps illustrate the refinements in the new Jensen Series 3000 speakers.



Jensen Series 3000 speakers move sound performance into new dimensions.

Jensen® Series 3000 car stereo speakers are the result of years of research spent redefining the very limits of acoustical superiority. By integrating state-of-the-art technology with innovative design and construction concepts, the Jensen Series 3000 offers a new dimension in speaker performance.

To develop this exciting line of new speakers, each individual component part of a car stereo speaker system was scrutinized. After long and careful study, some components were refined, many others underwent a complete redevelopment based on the most up-to-date design, material and manufacturing technologies.

All Series 3000 speakers have been dynamic range-enhanced to maximize fidelity

and performance with any car stereo receiver or component. From the outside in, Series 3000 TRIAX® and COAX speakers have been designed for ease of installation, new levels of sensitivity, efficiency and Jensen's most accurate sonic reproduction to date.

TRIAX® Speakers. Jensen invented the TRIAX® 3-way speaker system. So advanced and innovative, it's protected by a patent. And, while our competitors are still trying to imitate it, we've taken our speakers to yet a higher level of sound performance.

Embracing every innovation from a new cone material to a more powerful magnet, they produce the most accurate sound Jensen has ever achieved.

6" x 9" TRIAX. The Jensen J3033 also features bi-amp capability to further enhance power handling—an incredible 100 watts—while minimizing distortion. A new tweeter and midrange produce music with exceptional clarity and smoothness.

6½" TRIAX. The Jensen J3023 packs 75 watts of power handling. A grille height of less than 1" and a mounting depth of less than 2", we believe makes this the thinnest door TRIAX you can buy. A TRIAX this small has never sounded so big!

For our big COAX sound, turn the page...



COAX Speakers. Jensen Series 3000 COAX speakers share the outstanding innovations that have set a new standard for sound reproduction. New P28 cone material, powerful strontium magnet, new phenolic cone tweeter all combine to enhance their performance.

COAX speakers also offer refinements to make installation quicker and easier. Like the 6½" TRIAX, the grilles on these speakers are round and thinner so door obstructions clear them more easily. Rounded, thicker pad rings

help keep the speaker rigid before and after installation. The new pad rings reinforce the acoustical seal without increasing the critical mounting depth.

Nothing was overlooked in designing these speakers for sound reproduction and user convenience. Jensen would settle for nothing less!

6½" COAX. The Jensen J3013 delivers 75 watts of power handling. Shallow mounting

depth simplifies installation on standard and imported cars. The highly efficient design of these speakers gives greater power handling capability with lower distortion.

4½" COAX. The Jensen J3003 offers 50 watts of power handling. Our smallest Series 3000 speaker utilizes the same materials as all other models in the line and is ideal for installation in most doors, side panels, and rear decks.

SPECIFICATIONS:	TRIAX	TRIAX	COAX	COAX
Model Number	J3033	J3023	J3013	J3003
Maximum Power Handling	100 watts	75 watts	75 watts	50 watts
Useable Frequency Response	38 Hz-40 kHz	52 Hz-40 kHz	52 Hz-40 kHz	63 Hz-40 kHz
Sensitivity (4 volts @ 1 meter)	103 dB SPL	101 dB SPL	100 dB SPL	98 dB SPL
Impedance	4 ohm	4 ohm	4 ohm	4 ohm
Woofer Size	6" x 9"	6½"	6½"	4½"
Midrange Diameter/Type	3" Cone	2" Piezoelectric		
Tweeter Diameter/Type	2" Piezoelectric	1½" Piezoelectric	2" Piezoelectric	2" Piezoelectric
Magnet Weight	20 oz.	20 oz.	16 oz.	12 oz.
Mounting Depth	3⅞" (98.4mm)	1⅞" (48mm)	1⅞" (48mm)	1⅞" (48mm)

Full 2 year warranty.

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JENSEN
CAR AUDIO

**When it's the sound
that moves you.**

Technical Talk

By Julian D. Hirsch



Speaker Distortion Measurements

SOME of the measurements made on speaker systems, such as of their frequency response, appear at first to be analogous to similar tests made on amplifiers and other electronic components. But it is important to realize that this analogy is sometimes rather tenuous, and the use of the same name for a specification is no assurance that it means the same thing when applied to products as different as amplifiers and speakers.

For example, although the frequency response of an amplifier can be measured with considerable accuracy and compared directly with that of any other amplifier, there is no such thing as *the* "frequency response" of a speaker. In fact, a loudspeaker has an *infinite* number of frequency responses, because there are infinitely many test-microphone and speaker locations, and any attempt to consolidate them all into a neat and reasonable form requires some major compromises, which are not always stated and may not be valid.

What about distortion? It is widely recognized that speaker nonlinearities far exceed those of any amplifier and are therefore presumably more likely to determine the total system distortion. Considering the (misguided) emphasis placed on minuscule amounts of amplifier distortion by manufacturers, dealers, ad writers, and many audiophiles, why do we not get as concerned about the thousands of times greater distortion typical of our speakers' output?

Perhaps we *should* be more concerned, but first there is the annoying little problem of defining and measuring these acoustic

distortions. This problem arises in part because a speaker does not exist (functionally) by itself. It is surrounded by an acoustic environment that plays a large part in its actual output with respect to both frequency response and distortion. Almost any aspect of the acoustic output of a speaker is a complex function of frequency, and most methods of measuring both response and distortion involve some form of smoothing out to produce a less complex-looking test result that can be interpreted more easily.

There are instruments that can make swept distortion measurements analogous to the widely used swept frequency-response measurements. They are very expensive, however, and only a relatively few manufacturers and research laboratories have them. Without such a facility, it is worse than useless to attempt to measure distortion over most of a speaker's operating frequency range. Even a slightly different test frequency may make a large difference in the measured distortion. Also, there is no general agreement about which of the many possible types of distortion—and speakers have an amazing variety of types not necessarily found elsewhere in an audio system—are audibly objectionable and which are not. On the whole, I feel that most speaker-distortion data would be misleading to readers unfamiliar with the proper (and complicated) ways of interpreting them.

Why, then, do we measure and refer in our reports to the *bass* distortion of the speakers we test? For one thing, the close microphone placement used for our woofer measurements essentially eliminates the ef-

fect of the room on the data. What we are measuring is the distortion caused by the nonlinearity of the woofer's suspension and magnetic system. In the case of vented systems, though, there is a possible ambiguity in the data because the port radiation becomes comparable to the cone radiation at some frequency, below which the port actually contributes the dominant portion of the total low-frequency output of the speaker. Very different distortion readings may be obtained from measurements at the cone and the port, and combining these into a single-valued distortion curve requires some of the same compromises used in splicing the woofer frequency-response curve to the higher-frequency room-response curve.

Moreover, the actual bass distortion is rarely an audible factor in a speaker's sound quality. It may be heard, if at all, as a change of timbre in the sound of some instruments, but it is highly unlikely to be sensed as a harsh distortion. So why bother with it at all? Well, the woofer distortion curve shows how low in frequency the woofer can operate without a serious loss of sound quality. In most cases, there is some frequency below which a speaker shows a rapid increase in distortion as its cone excursions become highly nonlinear. Electronic bass boosts cannot force a speaker to emit useful bass energy below that point. This measurement, then, combined with that of the frequency response of the woofer, gives a good indication of a speaker's true low-frequency limit.

To have any meaning, such a measurement must be related to the driving signal

Tested This Month

Aiwa AD-F660 Cassette Deck • Tandberg Model 3012 Integrated Amplifier
Denon DRA-300 AM/FM Receiver • Goldring Electro II Phono Cartridge
Design Acoustics PS-10 Speaker System



You've got what it takes.

Salem Spirit

*Share the spirit.
Share the refreshment.*



Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

level. Most speakers are reasonably linear (nondistorting) at very low levels, and every speaker becomes nonlinear above some high drive level. (This is somewhat analogous to amplifier power ratings and the differences between their operation at low signal levels and near the clipping point.) For many years, we have used constant-voltage speaker drive signals of 2.83 and 8.94 volts, equivalent to 1 and 10 watts, respectively, into 8-ohm loads, for testing bass distortion. The measurements are made at a number of different frequencies from 100 Hz down to the point where distortion becomes excessive (more than 15 or 20 percent).

From time to time, it has been suggested that our reference instead be a constant sound-pressure level (SPL) output from the speaker, such as 90 dB. But such a measurement must be made very close to the woofer, and no fixed SPL at that point would be easy to relate to the SPL at some distance in an arbitrary room environment. Also, to maintain a constant SPL as the speaker's output decreased would require that the amplifier drive level be increased substantially as we went down in frequency, which could produce some serious side effects. For instance, the amplifier might reach its clipping level before the speaker "bottomed out," or the speaker might be damaged by

the application of very high power levels at the lowest audio frequencies. Even if neither of these happened, the resulting distortion curve would usually show an abrupt rise below some critical frequency, similar to the clipping action of an amplifier, that would not necessarily relate to the speaker's audible performance with musical program material.

We experienced all of the above effects during the period when we tried this method some years ago (the test results were not used in our published reports). But recently the weaknesses of our constant-voltage drive system were demonstrated. In our tests of the Technics SB-X700, a relatively sensitive (or, if you prefer, "efficient") speaker, the distortion at 1 watt rose steeply (though not excessively) below 50 Hz, but at 10 watts the measured distortion was considerably higher than we usually encounter from speakers of this quality. We noted in the text of the report that the SB-X700 was about 6 dB more sensitive than most comparable speakers and that therefore the "1-watt" and "10-watt" power levels really should be interpreted as "4-watt" and "40-watts" levels if our distortion measurements on it were to be compared with those on most others. We were not happy with this state of affairs. We were

concerned that readers might ignore or misunderstand this explanation and assume that the SB-X700 has a "high" distortion level, which it does not.

This and similar experiences have now led us to modify our bass-distortion test so as to allow for differences in speaker sensitivities. More important, these changes—instituted with last month's speaker tests—permit more realistic comparisons. Our new procedure is based on our midrange sensitivity measurement, in which the SPL is measured at 1 meter using a 2.83-volt mid-band random-noise drive signal. The voltage required for a 90-dB SPL measurement in that test is then computed, and that voltage is used as the constant drive for the bass-distortion test. This avoids unfairly penalizing highly sensitive speakers or favoring relatively insensitive ones, yet it does not create the potential of exceeding the limits of the amplifier or speaker since just about any speaker and amplifier should be able to produce the moderately loud 90-dB sound-pressure level easily. These changes are a typical example of the way in which our test procedures have evolved over the past thirty years to accommodate ongoing technological developments and to improve the value of our test reports for STEREO REVIEW's readers. □

Equipment Test Reports

Hirsch-Houck Laboratories: Julian D. Hirsch and Craig Stark



Aiwa AD-F660 Cassette Deck

THE Aiwa AD-F660 cassette deck offers Dolby-B and Dolby-C noise reduction as well as Dolby-HX Professional high-frequency headroom extension. A three-head, dual-capstan deck, the AD-F660 has a horizontally mounted control panel, and among its features is an automatic head-demagnetizing circuit that is activated for 1½ seconds each time the deck is turned on.

The AD-F660's separate record and playback head sections allow instantaneous comparison between source and recorded

signals. The two heads, which are in a common case (with a spacer between them), are made of hard permalloy with a Sendust facing. The dual capstans are belt-driven by a d.c. servomotor and have a special "Micro-Grain" surface to prevent tape slippage between the capstans and pinch-rollers. A second d.c. motor turns the reel hubs. All transport modes are solenoid-operated, and the play, record, pause, and record-mute pushbuttons have LED indicators.

The AD-F660's illuminated cassette well

is visible through the clear door, which is removable for head cleaning and capstan demagnetizing. Sensor switches within the cassette well detect tape type and automatically set the proper equalization and bias levels. In addition, there is a bias-optimizing control for ferric and CrO₂-type tapes.

Besides the transport pushbuttons, the control keyboard contains one long-throw (4-inch) record-level slider and six small pushbuttons for selecting counter and memory options. The four-digit electronic count-

Photos by Roy Schreiber

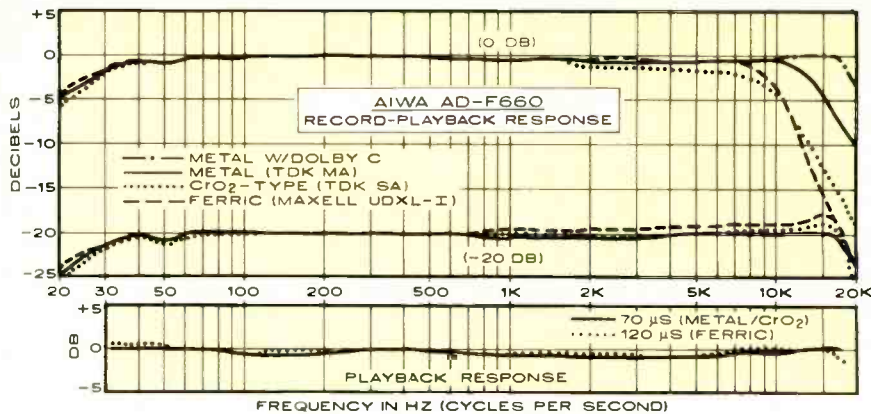
er can be set to read either in conventional, arbitrary units or in minutes and seconds remaining on a tape side (during fast winding it displays minutes only). The memory modes include not only the usual rewind/stop and rewind/play but also the option of continually repeating a section within a tape. The MUSIC SCAN feature permits skipping ahead or back to the start of a selection and beginning playback from that point. The INTRO PLAY feature operates similarly except that it plays only the first 8 seconds of the music and skips to the next starting point and repeats the process if the user doesn't press the play button. Both MUSIC SCAN and INTRO PLAY utilize the blank spaces between selections, and the AD-F660 has a button to insert the spaces when you are recording your own tapes.

Record and playback levels are shown by a twelve-segment-per-channel LED scale calibrated from -20 to +10 dB, with the Dolby-level marking at +2 dB. The 0-, +1-, and +2-dB LED's are yellow, with red above and green below these levels. Recommended maximum peak-level inputs are marked at +4, +6, and +8 dB for ferric, chrome, and metal tapes, respectively, and the highest illuminated segment remains on for approximately 2 seconds to ensure that it will be noticed. Front-panel LED's indicate tape or source monitoring, tape type, noise-reduction system in use, etc. The front panel also contains a record-balance control, a headphone jack, and a switch for external timer control.

The rear panel of the AD-F660 has the usual input and output jacks, a connector for an optional infrared remote control, microphone jacks, an FM multiplex switch, and a two-position headphone-volume switch. The deck measures 16³/₈ inches wide, 4³/₈ inches high, and 11¹/₄ inches deep, and it weighs just over 12 pounds. Price: \$395. Aiwa America, Inc., Dept. SR, 35 Oxford Drive, Moonachie, N.J. 07074.

● **Laboratory Measurements.** The playback frequency response of the AD-F660 for both normal (120-microsecond) and high-bias/metal (70-microsecond) tapes was almost ruler-flat, measuring within +0.5, -1 dB over the 31.5- to 18,000-Hz range of our IEC standard (BASF) calibrated tape.

Aiwa supplied the three TDK tapes—D (ferric), SA (high-bias), and MA (metal)—used in the factory setup of our sample deck. We also tested it with a variety of other formulations, including Sony EHF, TDK



The upper curves indicate overall record-playback response at the manufacturer's indicated 0-dB recording level using the tapes designated on the graph. In the center are the same measurements recorded at -20 dB relative to the upper curves, a level conventionally used for tape-deck frequency-response measurements. Bottom curves show playback response from calibrated test tapes and indicate performances with prerecorded tapes.

AD, and Maxell UDXL-1 (ferrics); Sony UCX-S, Memorex HB-II, and BASF Pro II (CrO₂-types); and Fuji FR and Maxell MX (metal). By using the fine-bias adjustment we obtained almost identical curves with all these formulations. For our graphs and measurements, however, we substituted the premium Maxell UDXL-1 for the standard TDK D because it yielded a somewhat better signal-to-noise ratio (S/N). With all three tape types the frequency response at -20 dB was very wide, being down by 3 dB at about 25 and 19,000 Hz. At the official IEC 0-dB level of 250 nanowebers/meter, nearly 4 dB above the AD-F660's own 0-dB indication, the Dolby-HX Professional system extended the treble overload point somewhat beyond what we would expect, but since the system could not be switched out we could not measure its effect precisely. As the uppermost curve at the 0-dB level shows, however, using metal tape with the the Dolby-C noise-reduction system (which lowers the high-frequency record pre-emphasis) produced a response that was flat almost all the way to 18,000 Hz.

The third-harmonic distortion of a 315-Hz tone recorded at the IEC 0-dB level measured 0.22, 0.89, and 0.26 per cent for Maxell UDXL-1, TDK SA, and TDK MA, respectively, and the recorded level on these three tapes could be raised by 5.1, 4.1, and 8.6 dB before 3 per cent distortion was encountered. With reference to the 3 per cent point, the signal-to-noise ratios, unweighted

and without noise reduction, measured 54.4, 56.1, and 60.5 dB with UDXL-1 (ferric), SA (high-bias), and MA (metal), respectively. With the customary IEC A-weighting and Dolby-B, the S/N's improved to 67.6, 69.2, and 73.9 dB. With the same weighting and Dolby-C, the ratios improved to 73.9, 75.6, and 80.1 dB, which is astonishingly good performance.

Wow-and-flutter figures were no less impressive, measuring only 0.019 per cent (wrms) and 0.038 per cent (DIN peak-weighted) with our Teac MTT-111 test tape. Both tape speed and Dolby-level calibration were exact, and frequency-response errors introduced by either Dolby-B or Dolby-C at levels of 0, -20, and -40 dB amounted to less than 1 dB throughout the entire range of the deck. Line-level sensitivity was 59 mV for a 0-dB output of 0.41 volt. The microphone inputs required a level of 0.3 mV for a 0-dB reading, and they overloaded at 33 mV, an average figure for home cassette decks.

● **Comment.** Its combination of top performance, tasteful styling, and an array of useful features for under \$400 makes the Aiwa AD-F660 a bargain hunter's delight. We did miss a playback output-level control, the record-indicator light is difficult to see when you are standing directly in front of the deck, and neither the high nor low setting of the headphone volume switch was quite right for our particular headphones. And we would have *felt* safer with a built-in calibrated oscillator for bias optimization—even though we found that the three-head design of the AD-F660 enabled us, using low-level FM hiss as a signal source, to optimize the bias by ear very nearly as accurately as with our lab generator. (Some of the features we missed on the AD-F660 are available on Aiwa's next models up, the AD-F770 and the AD-F990.) But we cannot fault the AD-F660 either sonically or in terms of ease of operation.

We had no way of testing the automatic head demagnetizer, but we find the idea an interesting one. The well-spaced controls worked smoothly, and although the minutes-and-seconds mode of the electronic

DOLBY-HX PROFESSIONAL

THE Dolby-HX Professional system incorporated in the Aiwa AD-F660 is a means of extending response when high-level high-frequency signals are present. Such signals often drive tapes into saturation, decreasing treble capacity, which is also what happens when too much bias is applied. The theory behind the Dolby-HX Professional system is that high-level high frequencies in a music signal actually contribute to the bias

level and in effect *overbias* the tape. What the system does, therefore, is to lower the regular bias by the amount of additional bias produced by any powerful high frequencies that are present. While Dolby-HX Professional does not give normal and high-bias tapes all the treble performance of metal tape (which is also assisted by this system), it does significantly improve their high-end frequency response.

One of the best pieces of audio equipment you can buy



is a piece of video equipment.

Introducing Beta Hi-Fi.™

Throughout the years, when it came to enjoying great home video, something was always missing from the picture. Great sound.



(Dynamic Range, measured in dB, is the ratio of the softest to the loudest sounds an audio medium can handle.)

Stereo VCR's didn't solve this problem. With a dynamic range of about 46 dB (only slightly better than AM broadcasts), they fell way short of bringing the "true theater experience" into your home. So you still couldn't find a VCR with sound quality in tune with picture quality.

That was until now.

Sony brings you the best sound system ever developed for home video: Beta Hi-Fi.

Beta Hi-Fi boasts an incredible 80 dB of full-color sound when hooked up to your audio system, and wow and flutter so low it can scarcely be measured (less than 0.005%).

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tems. And that makes this piece of video equipment just about the best piece of audio equipment you can buy.

Unlike other stereo VCR's, Beta Hi-Fi records both stereo sound and video using the rapidly spinning video heads, with a tape-to-head speed over 200 times faster than conventional VCR audio recording.

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CIRCLE NO. 3 ON READER SERVICE CARD

counter does not have the accuracy of a clock, we found it extremely useful.

On prerecorded materials the AD-F660 was exceptionally close to our reference deck. For serious recording the difference between Dolby-B and Dolby-C was very apparent, but that is hardly surprising. When using our most demanding test source—a

digital Compact Disc player—we found that metal tape was required to capture the full high end at high signal levels and that if we played the music at nearly ear-shattering levels some hiss could be made audible even with Dolby-C. But the clarity that characterizes digital discs also characterized the tape copies we recorded and played

on the AD-F660. Indeed, our cassettes sounded so similar to the original CD's in this respect that we are tempted to say they were indistinguishable. Semantic niceties aside, the Aiwa AD-F660 is clearly in a league with the best. —Craig Stark

Circle 140 on reader service card



Tandberg Model 3012 Integrated Amplifier

TANDBERG'S new Model 3012 integrated amplifier is rated to deliver 100 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.02 per cent distortion. It is packaged compactly, measuring 17 1/8 inches wide, 13 3/4 inches deep, and 3 1/4 inches high and weighing about 21 1/4 pounds. Its styling and size match those of current Tandberg tuners, and it can be stacked with one of them to form a "receiver" of exceptional quality. The amplifier is available in either matte-black or pewter finish.

The front panel of the 3012 presents a simple, uncluttered appearance, yet it provides all the operating flexibility you expect from a top-grade amplifier. The large volume knob is concentric with a center-detented balance control. There is a front-panel headphone jack. Small pushbuttons control power, tone-control defeat, bass and treble turnover frequencies, and loudness compensation. A pair of PEAK CLIPPING lights show when either channel is overdriven. Small detented rotary switches operate the speaker selection (A, B, A + B, OFF), the tone controls, and the RECORD and PROGRAM source selection. These last two controls enable the user to select different sources for simultaneous listening and tape recording. The PROGRAM options include phono, tuner, and two tape-recorder inputs as well as a DIGITAL DISC input. The RECORD sources are the same except that the tape mode connects the two decks for copying from either one to the other.

It is noteworthy that the DIGITAL DISC input is *not* identical to the other high-level inputs, tuner and tape. The latter two are buffered by low-distortion amplifier stages before they are selected by the front-panel switches, so that crosstalk between them is completely eliminated. The DIGITAL DISC input, however, is switched directly to the vol-

ume control, minimizing the number of extraneous elements in the signal path.

The 3012 embodies a number of design concepts that its creators felt would contribute significantly to its audible qualities, if not to its measured performance. For example, Tandberg engineers concluded that dielectric absorption in certain types of electrolytic or ceramic capacitors used in most amplifiers for interstage coupling tends to degrade sound quality in subtle ways. To eliminate any possibility of such degradation in the 3012, no electrolytic or ceramic capacitors are used in its signal path, from the phono inputs to the speaker outputs. Low-loss plastic (polyester) foil-dielectric capacitors are used instead in all signal-carrying circuits. The designers also felt that a high slew rate was a desirable quality in an amplifier, and the 3012's 1,000-volt-per-microsecond slew rate is the result. Within the amplifier circuitry, every opportunity was taken to eliminate known or suspected causes of signal degradation.

The phono preamplifier of the 3012 accepts either a moving-magnet (MM) or moving-coil (MC) cartridge input; there are separate MM and MC input jacks, but no switching is required. The phono equalization follows the modified RIAA characteristic adopted by the IEC several years ago, which calls for the phono-input response to be rolled off below 20 Hz. The 3012 incorporates a fixed infrasonic filter that cuts off below 15 Hz at an 18-dB-per-octave rate, effectively eliminating any possibility of amplifier or speaker overload from record or turntable rumble.

The tone controls depart from conventional practice, being designed to give useful correction only at frequencies where it is likely to be needed, with a minimum of audible effect elsewhere. The bass and treble controls (eleven-position step switches) use

1 per cent precision resistors for accurate 2-dB control steps and have selectable turnover frequencies (100 or 200 Hz for the bass, 3,000 or 6,000 Hz for the treble). Although loudness compensation—anathema to some purists—is included in the 3012, it is designed to give a maximum low-frequency boost of only 6 dB and does not affect the high-frequency response.

The output stages of the Tandberg 3012 use two power MOSFET's per channel; these require no current or voltage limiting for their protection and also operate at a very high speed (as demonstrated by the amplifier's slew rate and by a slew factor said to be more than 1,200). The power supply is based on a compact but powerful toroidal transformer, with a pair of 15,000-microfarad filter capacitors providing the necessary energy storage for handling high-power program peaks. Price: \$995. Tandberg of America, Inc., Dept. SR, P.O. Box 58, Armonk, N.Y. 10504.

● **Laboratory Measurements.** The top of the 3012 never became too hot to touch during the one-hour preconditioning period or subsequent high-power testing. The internal heat sinks are effectively cooled by air entering through the bottom and exiting through the top of the amplifier. Our power measurements were made through the DIGITAL DISC input. The 1,000-Hz clipping-power output with 8-ohm loads was 109 watts per channel (for a clipping headroom of 0.37 dB). The maximum output was 127 watts per channel into 4-ohm loads and 98 watts per channel into 2-ohm loads. Using the tone-burst signal of the dynamic-headroom test, we measured short-term clipping outputs of 156, 213, and 156 watts into loads of 8, 4, and 2 ohms, respectively. The 8-ohm dynamic headroom was, therefore, 1.93 dB. (Continued on page 44)

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Panasonic introduces a new stereo component system for your car: the Supreme Elite. Each component was engineered with advanced sound technology. Technology that provides this car audio system with some of the most sophisticated features on the road today.

The Supreme Elite Cassette/Stereo Receiver (CQ-S358) features the Panasonic Hypertuner that nearly doubles FM sensitivity—allowing you to enjoy greater reception range than conventional FM tuners. Other features include electronic tuning with digital display for station frequency and time of day as well as an auto-reverse cassette player with locking fast forward/rewind.

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these advanced features are also offered in the Bantam mini-chassis Supreme Elite Cassette/Stereo Receiver (CQ-S818).

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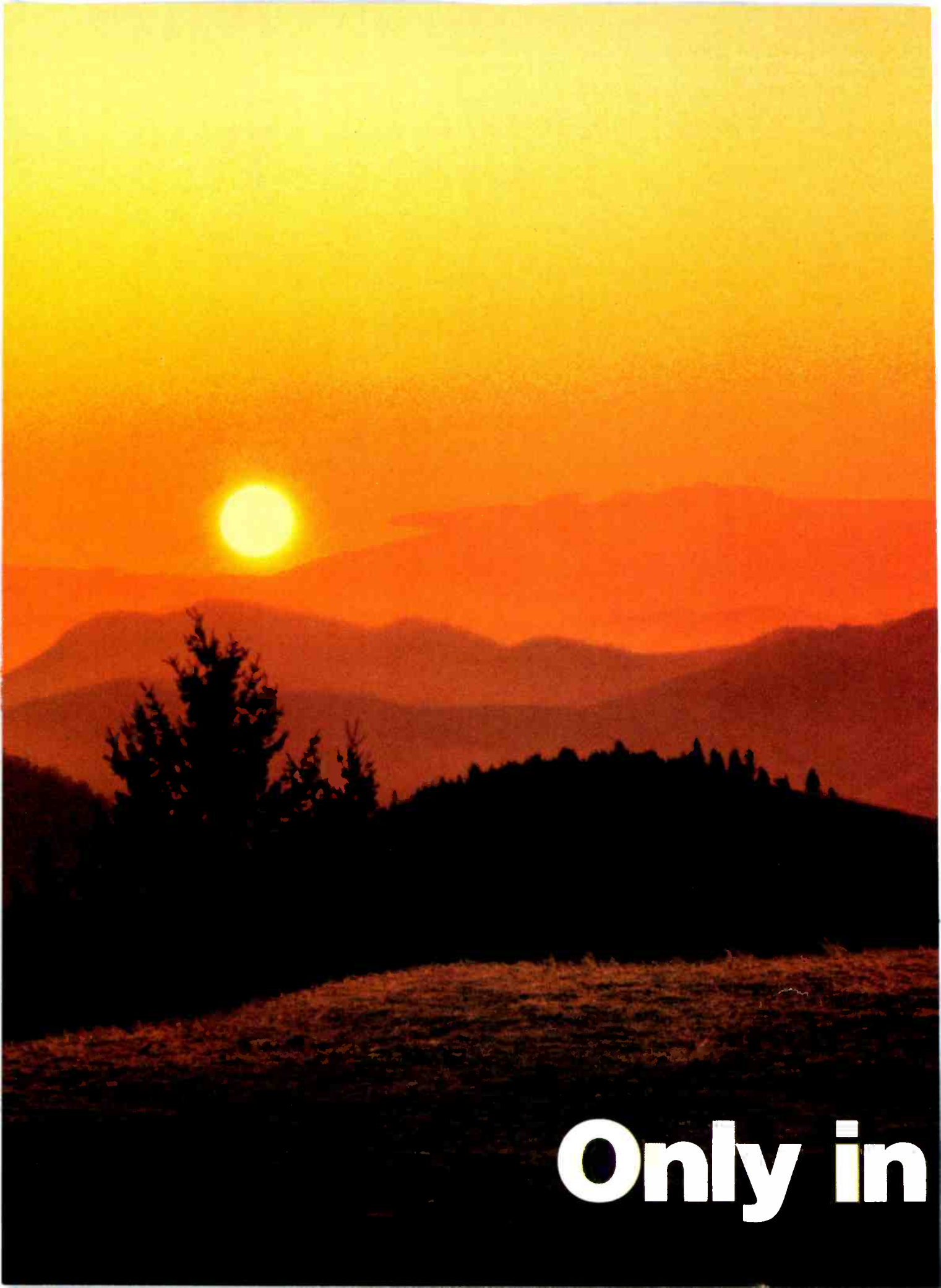
So, if conventional car audio has been your standard of listening, now you can raise that standard with Panasonic Supreme Elite.

Panasonic car audio

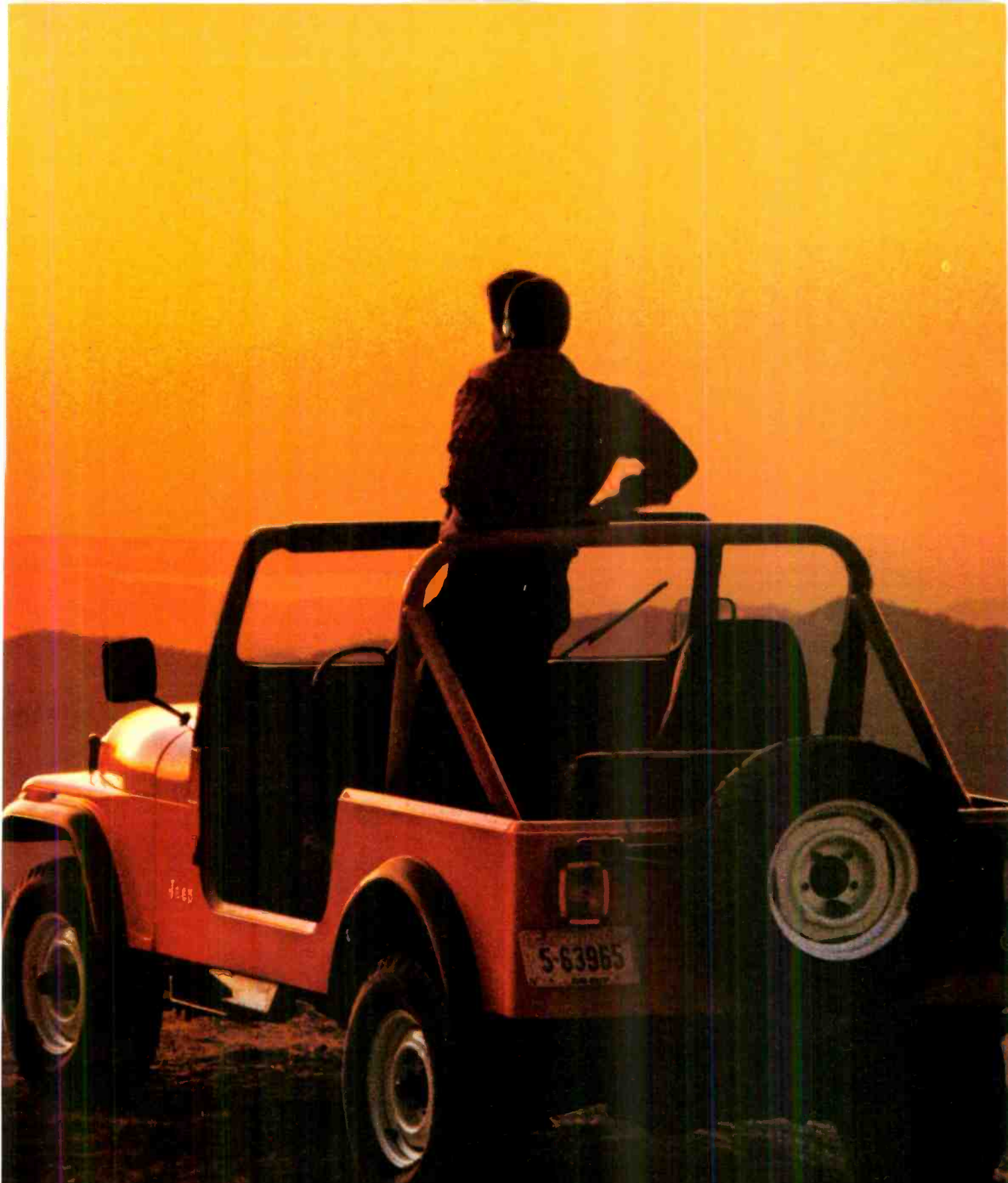
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CIRCLE NO. 4 ON READER SERVICE CARD

* Maximum Power Output: 100W (4 x 25W) at 1 kHz.



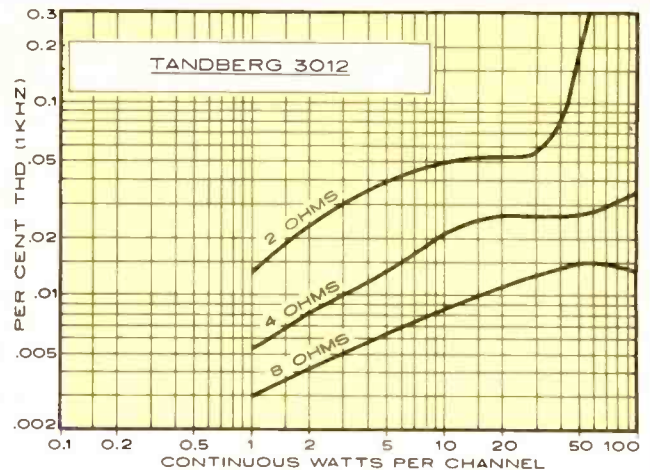
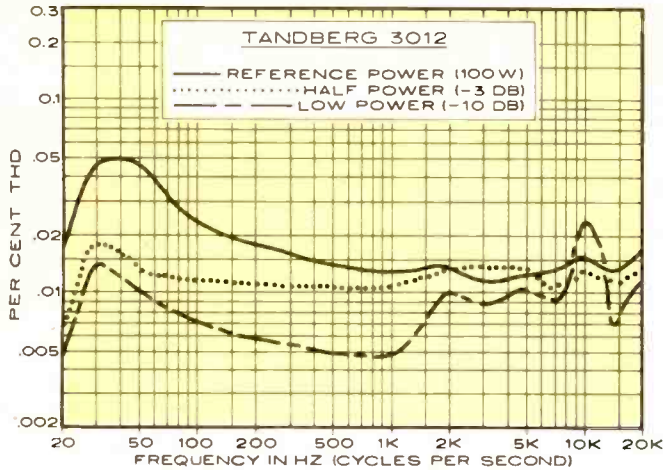
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The 1,000-Hz harmonic distortion, driving 8 ohms, rose from 0.003 per cent at 1 watt to 0.014 per cent at 100 watts. With 4-ohm loads, it was 0.0056 per cent at 1 watt and 0.034 per cent at 100 watts (the thermal-protection circuit cut off the amplifier at this point). The 3012 is not rated for 2- or 4-ohm operation, but with 2-ohm loads the distortion was 0.014 per cent at 1 watt, increasing to 0.55 per cent at 70 watts. The output devices had become very hot at that point and apparently were no longer able to deliver the nearly 100-watt output we had measured earlier.

The distortion at rated power into 8 ohms was between 0.012 and 0.018 per cent from 20 to 20,000 Hz except for a rise to 0.047 per cent between 30 and 50 Hz. This rise may have been the result of an interaction with power-supply ripple, although this was not apparent on the spectrum-analyzer display. At half and one-tenth power, the dis-

ortion curve's shape was similar, with slightly lower readings (0.005 to 0.025 per cent) over the full frequency range at 10 watts output.

The amplifier's slew factor exceeded our measurement limit of 25 (Tandberg's own measurements show a slew factor of 1,200, corresponding to a 24-MHz input before waveform distortion becomes visible!). We measured the IHF IM (intermodulation) distortion with 18- and 19-kHz inputs at a 100-watt output, which produced a second-order (1,000-Hz) component of about -86 dB and a third-order (17-kHz) component of -78 dB. The amplifier displayed strong ultrasonic ringing when we drove a simulated reactive loudspeaker load with a 10,000-Hz square wave. This load, whose highly reactive impedance dips to 2 ohms at some frequencies, is designed to be more severe than that of any loudspeaker one is likely to encounter.

The 3012's sensitivity for a 1-watt reference output was 16 millivolts (mV), with an A-weighted noise level of -77 dB referred to 1 watt. The MM phono sensitivity was 0.17 mV, with a -80-dB noise level, and for the MC input it was 0.016 mV with a -75-dB noise level. The phono preamplifier (MM) overloaded at a very high input level, ranging from 240 mV at 20,000 Hz to 323 mV at 20 Hz. The phono equalization was within 0.5 dB of the RIAA characteristic from 35 to 20,000 Hz, falling to -1.5 dB at 20 Hz because of the infrasonic filter. It was not significantly affected by phono-cartridge inductance.

The characteristics of the 3012's tone controls were as close to ideal as we have seen from a simple bass-and-treble configuration. Even at their extreme settings, where the response at the frequency limits was varied by about 10 dB, the midrange was totally unaffected. Using the 100- and 6,000-Hz turnover frequencies and the middle control settings, we were able to modify the response by 6 dB at 20 and 20,000 Hz with essentially no effect between 60 and 3,000 Hz. The loudness compensation was equally subtle in its action, beginning to boost the response below about 200 Hz at volume settings of -20 dB or less and giving a maximum boost of 6 to 7 dB at 20 Hz. The overall frequency response with the tone controls bypassed was literally ruler-flat (less than 0.1 dB total variation) from 20 to 20,000 Hz.

● **Comment.** Tandberg claims that, good as the measured performance is, the 3012's special distinction lies in its sound quality. Although we have never found such distinctions among high-quality amplifiers to be audibly significant, we can say that the sound of the 3012 is easily as good as that of any other fine amplifier we've heard. Possibly those golden ears who claim to hear differences between the types of capacitors used in an amplifier will be able to appreciate the special sonic properties of the Tandberg 3012 more than we can.

The 3012 has absolutely no vices that we could detect. It is not in the least fragile, since it shuts itself off if abused electrically or thermally, returning to service automatically when conditions have gone back to normal. There are no extraneous noises connected with its operation: no switching tran-



"I'm not an electronics expert, sir. Let me check with our service department . . . Oh, Jerry, how big is a 'jumbo' watt?"



THE DIGITAL DIRECT DECODER.™ TECHNOLOGY SO ADVANCED EVEN A HUMAN BEING CAN HEAR THE DIFFERENCE.

Most highly-touted, so-called technological breakthroughs are actually so subtle only a handful of people in the world can actually discern that there's a difference.

The rest of us, audiophiles and normal human beings alike, must be content to subtract the old specs from the new and assume there really is an audible difference.

But not with the F-90 tuner. A new tuner with design technology that *High Fidelity* says represents "... a stunning breakthrough in FM tuner performance thanks to a circuit it (Pioneer) calls a Digital Direct Decoder..."

Not only are the new F-90's specs remarkably superior to the naked eye, its sound quality and reception capabilities are unmistakably better to the naked ear.

Coupled with its companion amplifier, the A-90, you have a system that produces much cleaner, more musical sound. The kind of sound the musicians and recording engineers had in mind in the first place.

The reason is an exclusive, revolutionary

new technology invented by Pioneer engineers. The Digital Direct Decoder is an unconventional circuit that uses a 1.26 MHz pulse train and a pure 38 KHz sine wave, thereby eliminating the need for a conventional noise filter (which creates distortion, harmonics, and limits frequency response).

Consequently, Total Harmonic Distortion at 1 KHz has been reduced to 0.0095% (mono) and 0.02% (stereo), which you'll have to agree is an exceptional improvement over conventional tuners.

Signal-to-noise ratio is an astonishing 93dB (mono), 86dB (stereo).

Furthermore, alternate channel selectivity (always a nemesis and rarely exceeding 60dB before) has been raised significantly to 90dB at 80dBf, eliminating neighboring station "bleed over" once and for all.

And, whereas the better tuners available before produced stereo channel separation numbers no higher than 50dB, the F-90's numbers are up 30% to 65dB.

Suffice it to say you can expect the same outstanding performance from our new A-90 integrated amplifier.

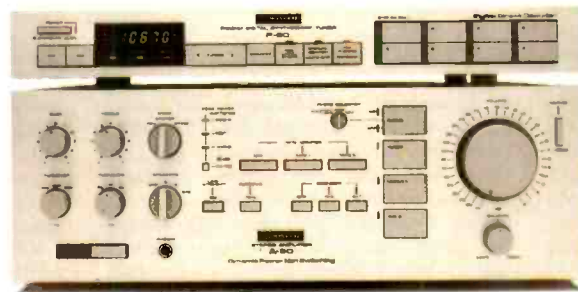
To begin with, there's 200 watts per channel of exceptionally clean power. (0.002% THD, 20-20,000 Hz at rated power, both channels driven, 8 ohms.)

And signal-to-noise ratio is a superior 115dB that combines with the above numbers to get distortion levels that read at the level of immeasurability.

The reasons: our new dynamic power supply, non-switching amp circuits, an FET Buffer circuit, D.C. Servo circuit, and a new, higher specification on even the lowliest components.

Naturally, we recommend you audition both the F-90 and A-90 at your earliest convenience.

Because mere words can't describe a difference so remarkable it can actually be heard with your own two ears.



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Because the music matters.

sients, no start-up or turn-off thumps, no audible hum or hiss at any control setting, and so forth. We did much of our listening using a digital Compact Disc player as the program source, and the results were as satisfying as one would expect from the combination of a state-of-the-art program source

and a state-of-the-art amplifier (the expression "state-of-the-art," although much abused, definitely applies to both products in this case).

The solid construction and quality of the components used in the Tandberg 3012 set it apart from most of its competition and

appear to justify its considerable (but not unreasonable) price. This amplifier is built so well and performs so satisfactorily that it is rather difficult to criticize. It is that good.

—Julian D. Hirsch

Circle 141 on reader service card



Denon DRA-300 AM/FM Receiver

THE Denon DRA-300 is a moderately powered, moderately priced stereo receiver with digital-synthesis tuning for both the AM and FM bands. Its audio amplifier section is rated to deliver 33 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.05 per cent total harmonic distortion. According to Denon, the power amplifiers employ a "non-switching" variable-bias circuit that reduces high-frequency distortion.

The DRA-300 has most of the operating features one looks for in a modern stereo receiver, including station memories (five each for AM and FM), a large, legible, digital frequency display, and pushbutton tuning controls with frequency steps of 100 kHz for FM and 10 kHz for AM. The bass and treble tone controls are operated by small knobs with center detents, and separate buttons activate the two sets of speaker outputs. The front panel also contains a power switch and a headphone jack.

Input switching is controlled by pushbuttons, with green LED's showing which source has been selected. The inputs include AM, FM, phono, and a high-level input marked DAD/AUX for a digital Compact Disc player (on the Japanese market the CD is known as the "DAD," or Digital Audio Disc). The SUBSONIC filter button engages an infrasonic filter that cuts off signals below 15 Hz at 6 dB per octave, and pressing the FM MODE button switches the tuner to mono and disables the interstation-noise muting for reception of weak signals. The loudness compensation is controlled by a button below the large volume knob. The DRA-300 can be used with two tape decks, and a knob on the panel connects them for dubbing from either one to the other.

Next to the display window is a group of tuning controls. Long UP and DOWN buttons step the tuning by one interval per operation. Holding a button in causes the tuner to step repeatedly, but there is no automatic scan or signal-seek feature, so some time may be needed to cover the entire tuning range. Five smaller station-preset buttons and a memory button are used in the conventional manner to store station frequencies. Unlike most receivers, which often have rather elaborate signal-strength or tuning indicators, the DRA-300 has only a single green LED, which shows that a signal of receivable strength has been acquired, and a red LED stereo indicator.

The rear of the receiver contains the usual signal input and output jacks, binding-post antenna terminals, and a detachable hinged AM loop antenna. The spring-loaded speaker terminals accept the stripped ends of the speaker wires. One of the two a.c. outlets is switched. The Denon DRA-300, finished in silver gray, measures about 17 inches wide, 16 inches deep, and 4½ inches high. It weighs 16¾ pounds. Price: \$299. Denon America, Inc., Dept SR, 27 Law Drive, Fairfield, N.J. 07006.

● **Laboratory Measurements.** Its moderate power rating and generous dimensions combined to keep the DRA-300 cool throughout our tests. The internally mounted output-transistor heat sinks are convection-cooled by air entering at the bottom of the receiver and exiting at the top.

With both channels driving 8-ohm loads, the output waveform clipped at 43 watts per channel, corresponding to a clipping headroom of 1.13 dB. Unlike most other receivers (and separate amplifiers as well), the

DRA-300 was able to deliver about the same power into lower load impedances, with clipping outputs into 4 and 2 ohms of 47 and 45 watts per channel, respectively. The short-term output was very high during the 20-millisecond bursts of the 1,000-Hz signal used for the dynamic-headroom measurement, measuring 100 watts into 8 ohms, 68 watts into 4 ohms, and 66 watts into 2 ohms. The 8-ohm reading, in particular, was so good that we doubted its validity, but it was confirmed by repeated measurements. This gives the DRA-300 a dynamic headroom of 4.8 dB, which is the highest we can recall measuring on any receiver or separate amplifier to date.

The 1,000-Hz harmonic distortion with 8-ohm loads rose smoothly from 0.013 per cent at 0.1 watt to 0.13 per cent at 40 watts. With 4-ohm loads, the readings were 0.02 per cent at 0.1 watt and 0.11 per cent at 40 watts. Even 2-ohm operation gave completely acceptable distortion readings, from 0.022 per cent at 0.1 watt to 0.09 per cent at 30 watts. Only at 40 watts did distortion become significantly higher, measuring 0.3 per cent.

Judging by the nearly constant distortion readings we obtained across the audio-frequency range, Denon's "non-switching" circuit appeared to be fulfilling its promise. At the rated 33 watts per channel (into 8 ohms) the distortion was between 0.08 and 0.09 per cent from 20 to 1,000 Hz, falling to between 0.05 and 0.06 per cent from 2,000 to 20,000 Hz (in most amplifiers, distortion rises appreciably at the higher audio frequencies). At half power and one-tenth power, the distortion curves had the same shape, but the readings were considerably lower at reduced power levels (typically 0.01

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You're probably using TDK SA-X high bias cassettes now because of their superior performance characteristics. In addition, TDK has developed normal bias AD-X which uses TDK's famous Avilyn particle formulation and delivers a wider dynamic range with far less distortion than ever before. Plus, TDK's unique metal bias MA-R cassette which features high-energy performance in a one-of-a-kind unibody

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The TDK Professional Reference Series...it'll sound impressive to your ears. So share the pleasure with your friends; they'll appreciate it.


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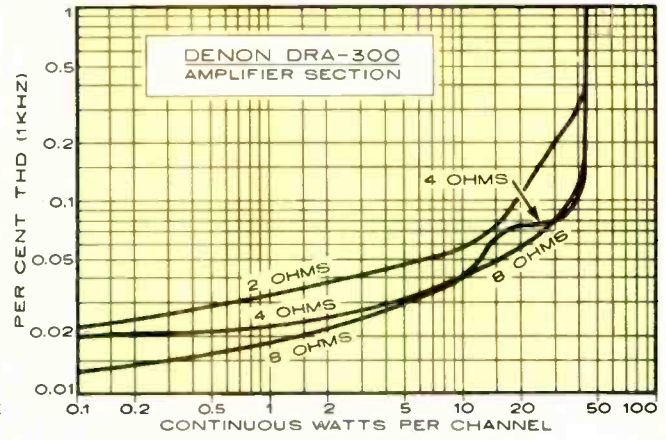
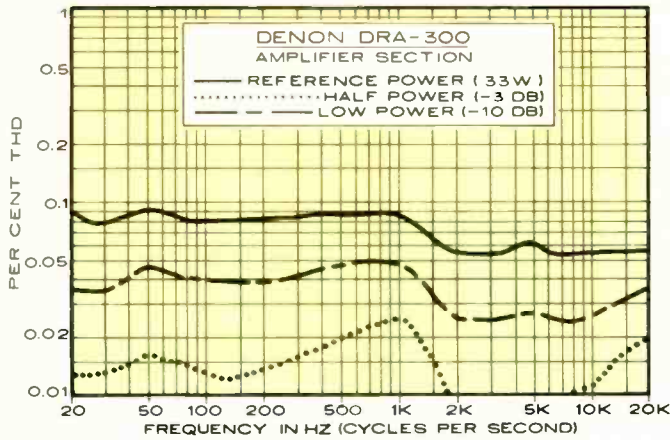
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to 0.02 per cent over the full range at 3.3 watts, which corresponds to a comfortably loud listening level for most people).

The IHF intermodulation distortion (mixed 18- and 19-kHz input frequencies) was -66 dB at 1,000 Hz and -69 dB at 17 and 20 kHz. The amplifier was stable with a simulated reactive speaker load (showing only moderate ringing on a 10,000-Hz square wave). The slew factor was 3, with a full-power sine wave taking on a triangular shape at about 60 kHz.

The amplifier sensitivity, for a reference output of 1 watt, was 26 millivolts (mV) at the DAD/AUX input and 0.4 mV at the phono input. The corresponding A-weighted noise levels were -78 and -73.5 dB. The phono input overloaded at a high level, from 157 to 222 mV depending on frequency. The DAD/AUX input overloaded at 3.1 volts, which should not cause problems in a home system (very few sources will reach that level even on peaks, and the CD players we have tested typically have a maximum output of 1.5 to 2 volts), but it is well to be aware of the input limitation. The phono input resistance was 47,000 ohms, shunted by a very low capacitance of about 20 picofarads.

The RIAA phono equalization was very accurate (within 0.5 dB of the ideal response from 20 to 20,000 Hz) and was not significantly affected by cartridge inductance. The tone-control response curves were hinged at about 500 Hz for the bass control and 1,000 Hz for the treble control.

The basic amplifier response at high frequencies (above about 6,000 Hz) was slightly affected by the volume-control setting (this is not unusual), and the SUBSONIC filter showed a rolloff beginning at 100 Hz and amounting to 7 dB at 20 Hz. The loudness compensation boosted both low and high frequencies as the volume level was reduced.

In mono, the FM tuner usable sensitivity was 16.3 dBf (3.6 microvolts, or μV), and the stereo switching threshold was at 29.3 dBf (16 μV). The 50-dB quieting sensitivity was 23.3 dBf (8 μV) in mono and 39.2 dBf (50 μV) in stereo. FM distortion at 65 dBf (1,000 μV) was 0.13 per cent in mono and 0.18 per cent in stereo. The mono and stereo noise levels at 65 dBf were -77 and -70 dB, respectively.

Other FM performance parameters included a capture ratio of 1.55 dB, AM rejection of 54 dB at 45 dBf (100 μV), and a marginally acceptable image rejection of 37 dB (although it is rated at only 45 dB). Selectivity was fairly good, 59 dB and 4.7 dB for alternate- and adjacent-channel spacings, respectively. The muting threshold was 30.2 dBf (18 μV). The 19-kHz pilot-carrier leakage into the audio was a rather high -50 dB, but the tuner hum was a low -73 dB.

The FM frequency response was flat from 30 to 1,000 Hz, rising slightly to +1.5 dB between 10,000 and 13,000 Hz and still up almost 1 dB (relative to 1,000 Hz) at

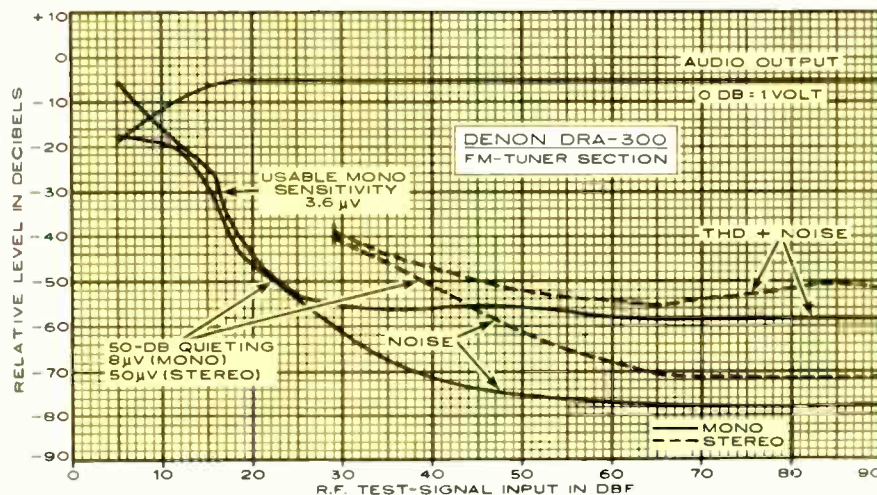
15,000 Hz. The channel separation was about 43 dB from 150 to 2,000 Hz, falling to 34 dB at 30 Hz and 37.5 at 15,000 Hz. The AM-tuner frequency response was quite limited, down 6 dB from the maximum (between 200 and 300 Hz) at 28 and 2,100 Hz.

● **Comment.** The Denon DRA-300 is noteworthy both for what it does and what it does not do. It departs from convention in not having any signal-strength indicator (other than the "go/no-go" light). But most people probably have little need for a signal-strength indicator, and the four- to five-segment LED displays devoted to that function on most receivers rarely convey much useful information beyond what is already obvious to the ear.

The DRA-300 lacks any rapid means of scanning the FM band; doing so by holding in one of the tuning buttons is a rather slow process. But once all the station presets have been entered, few listeners scan the entire band anyway. A built-in lithium battery maintains the preset memories when the receiver is turned off (for as long as five years, according to Denon, even if the receiver is not plugged into a powered socket!). Although the level of the 19-kHz pilot carrier in the tape outputs was undesirably high for taping FM broadcasts with Dolby noise reduction, most Dolby-equipped cassette decks have multiplex filters to deal with just such a situation.

These are all, in any case, minor criticisms. The most novel aspect of this receiver is something not mentioned in its specifications—its ability to drive the lowest-impedance speaker loads at a high power level without distress to itself or to listeners. As regular readers of these test reports know, amplifiers that are comfortable driving 2-ohm loads are not at all common, even at high prices, and low-priced receivers with that quality are exceedingly rare. It may not be audible during casual listening, but it is good to know that your receiver can deliver its full performance regardless of the speakers connected to it. Moreover, the DRA-300's very high dynamic headroom should enable this apparently low-power receiver to sound more like one with two or three times its power rating—and to cope well with the high peaks encountered in playing digital Compact Discs.

Overall, the Denon DRA-300 combines



some fairly standard features and performance parameters with others that are truly outstanding. It provides excellent performance in those areas that really matter, at a

reasonable price and in a relatively plain wrapper, without most of the flashy trappings of too many consumer electronics products today. Let us hope that the DRA-

300 signifies the start of a trend in receiver design.
—Julian D. Hirsch

Circle 142 on reader service card



Design Acoustics PS-10 Speaker System

It is widely accepted that stereo imaging can be improved by using the smallest possible sound sources. Therefore, the Design Acoustics "Point Source" PS-10 speaker was designed to radiate sound from the smallest area consistent with the necessary dimensions of its drivers and enclosure. It is a three-way bookshelf speaker with an unconventional appearance and driver configuration. The 10-inch woofer faces downward and radiates frequencies up to 190 Hz through a 1-inch-high slot between the speaker's enclosure and its base. The other drivers face forward in the usual manner. Most of the frequency range containing fundamental tones from musical instruments—from 190 to 2,600 Hz—is radiated by a 5-inch acoustically treated cone driver mounted near the center of the 11 x 12-inch front panel. The 1-inch soft-dome tweeter, located near one corner of the front panel, operates above 2,600 Hz. The asymmetrical tweeter placement permits pairs of PS-10's to be installed with both tweeters either at the inside or the outside, providing some control of imaging at different speaker spacings.

The front baffle of the PS-10 is covered with resilient rubber to reduce diffraction at the edges of the enclosure. On the front panel is a small knob that provides a continuous ± 3 -dB high-frequency level adjustment. The brown cloth grille is retained by plastic snaps. The speaker's connectors, recessed into the rear of the cabinet, are insulated and spring-loaded like those often used for speaker outputs on amplifiers and receivers. They are spaced on $\frac{3}{4}$ -inch centers, and their openings are large enough to accept dual banana-plug connectors.

The PS-10 has a nominal 8-ohm impedance and a sensitivity rating of 90 dB sound-pressure level at 1 meter when driven with 1 watt. The overall frequency response of the system is rated at 48 to 22,000 Hz, and the speaker is intended for use with amplifiers rated at between 15 and 250 watts per channel. The cabinet is covered with walnut-grain vinyl veneer and measures 14 inches high, 11 inches wide, and 13 $\frac{3}{4}$ inches deep. It weighs 23 $\frac{3}{4}$ pounds. The PS-10 is packaged and sold in pairs. Prices: \$500 per pair. Design Acoustics, Dept. SR, 1225 Commerce Drive, Stow, Ohio 44224.

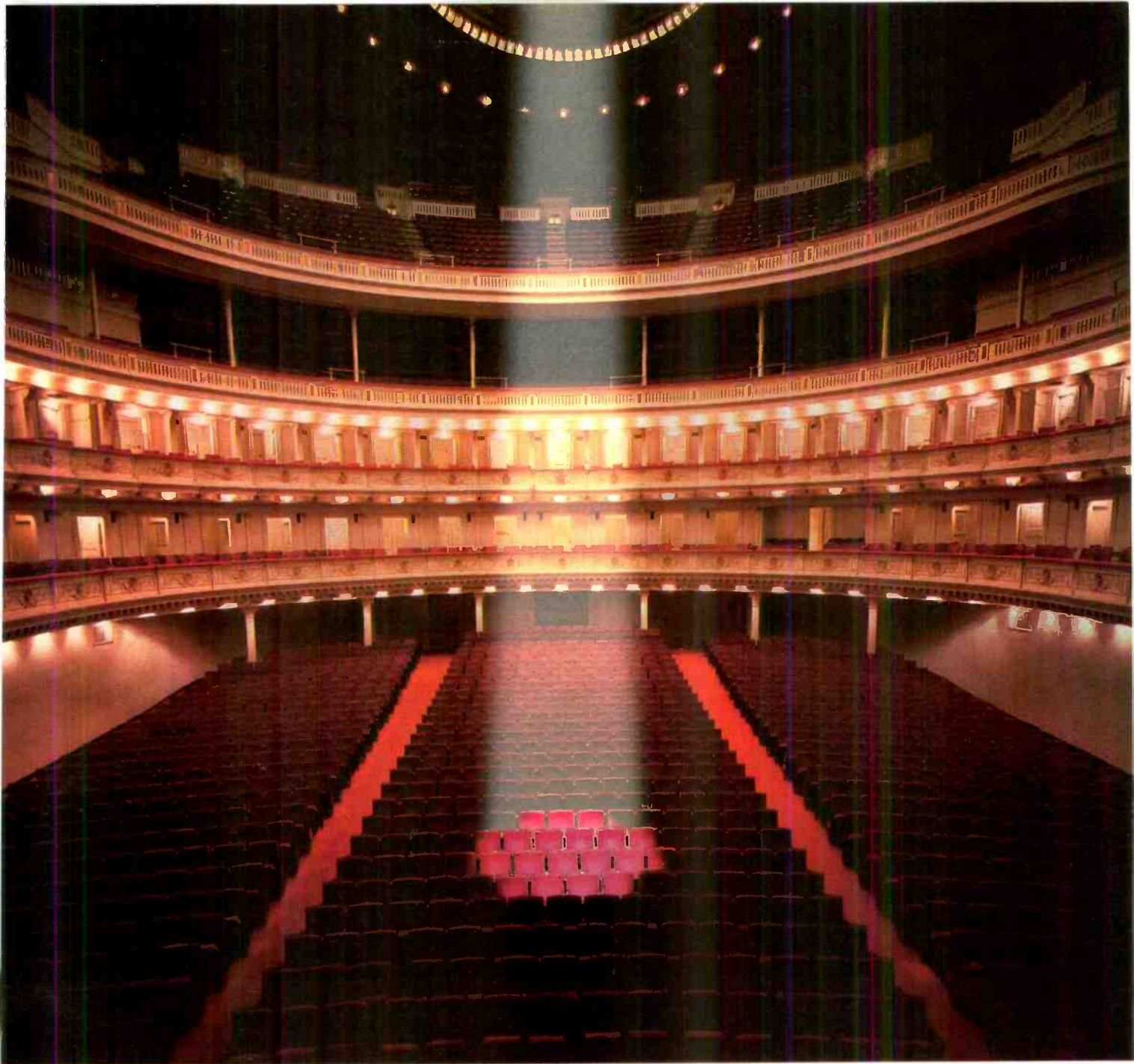
● **Laboratory Measurements.** The woofer of the Design Acoustics PS-10 is an acoustic-suspension design that operates in a sealed enclosure. We measured its output by inserting the microphone through the base slot to place it as close as possible to the cone. The output reached a maximum level at 100 Hz and fell off at 12 dB per octave above and below that frequency. A second response maximum was measured at 650 Hz, where the woofer's output equaled its 100-Hz level, and there was also a much smaller response peak at 1,200 Hz. These higher frequencies, however, do not radiate through the slot with equal effectiveness and thus do not have a major effect on the total output of the system.

Although we do not usually measure the response of midrange drivers with a close-spaced microphone, since this type of measurement is valid only when the cone diameter is small compared with the wavelength of sound at the highest measured frequency, the size of the PS-10's midrange cone (the company calls it a "mid-bass" driver) ap-

peared to be small enough for such a measurement. The resulting curve varied less than ± 2 dB from 115 to 1,900 Hz.

The averaged room response from our sample pair of PS-10's was very flat above 1,500 Hz. The 30-degree-off-axis tweeter dispersion was excellent up to 10,000 Hz, then the response dropped to -20 dB at 20,000 Hz. There were the usual response variations through the midrange, normal results of interference with reflections from room surfaces. The spliced curves showed a system response within ± 2.5 dB from 140 to 20,000 Hz, with the woofer output rising at 100 Hz to a peak of about 7 dB above the average midrange level before falling off at 12 dB per octave at lower frequencies. We also plotted the composite response with the close-miked midrange curve substituted for the room measurement between 150 and 1,100 Hz. The junctions between the various curves matched very closely, but the overall frequency-response variation was not greatly reduced by this technique. The tweeter-level adjustment tilted the response curve above 1,000 Hz, with a maximum effect of ± 3 dB above 5,000 Hz.

We could also see the woofer's secondary peaks (though greatly attenuated) in the room response. They appeared as a pair of peaks and dips with peak-to-peak amplitudes of 3 to 5 dB at 650 and 1,200 Hz. Such small aberrations (as well as considerably larger ones) frequently appear in our speaker-response measurements, and they are usually the result of room resonances or room-boundary interactions with the speaker. In this case, however, the variations in the room response corresponded closely with the measured anechoic woofer re-



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sponse, and we are inclined to link the two effects.

The woofer distortion was measured with a constant input voltage equivalent to one that would generate a 90-dB sound-pressure level at a 1-meter distance. This level was based on our own measurement of the speaker's sensitivity, which in the case of the PS-10 was 91 dB for a 1-watt input, almost exactly the rated value (and unusually high for a small acoustic-suspension system). With the same microphone placement used to measure its frequency response, the woofer's distortion was less than 1 per cent down to 66 Hz, rising to only 3.5 per cent at 45 Hz and 6 per cent at 30 Hz.

The PS-10's system impedance was unusually uniform, between 6 and 10 ohms at most frequencies from 20 to 20,000 Hz, with one dip to 4.5 ohms at 130 Hz. The axial frequency response, measured with our IQS FFT analyzer, was ± 3 dB from the 180-Hz lower limit of the measurement up to about 20,000 Hz. This measurement, made at a 1-meter distance with the speaker placed well away from walls and floor, also showed the anomalies in the upper woofer range revealed by our other measurements,

although the analyzer's frequency resolution was somewhat limited in this test.

The FFT analysis clearly showed the directivity of the PS-10's tweeter when we subtracted the 45-degree-off-axis response from the axial response. The two curves began to diverge above 10,000 Hz, with a maximum difference of 24 dB at 20,000 Hz. The group-delay (phase) characteristic varied about 0.3 millisecond overall between 2,000 and 20,000 Hz.

● **Comment.** The Design Acoustics PS-10 is best operated close to ear height, although not necessarily against a wall. Its considerable depth may prevent its installation on normal bookshelves, since it will extend over the front of even a 12-inch shelf. We did our listening and room-response measurements with the speakers placed against the wall on a ledge about 27 inches above the floor. For the FFT measurements the speaker was placed on a stand several feet from a wall.

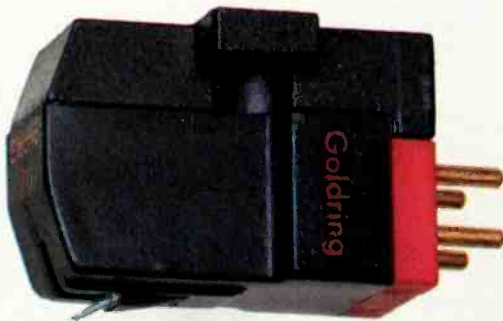
In our listening tests, the PS-10's delivered a smooth, balanced sound that was generally consistent with our measurements. We were pleased to find that the au-

dible bass response remained strong and clean far below the measured 100-Hz maximum-output frequency; in fact, the lower limit for truly effective bass response seemed to be about 50 Hz, confirming the manufacturer's 48-Hz rating. The highs sounded best to us with the tweeter level set at "0" (which also gave the flattest measured response). The slight bass emphasis at 100 Hz produced a moderate heaviness on male voices, but the PS-10 was similar in this respect to many other speakers we have tested. Overall, we found the sound from the PS-10's to be as satisfying as we would expect from a good \$250 speaker. It is quite possible that different placements of these units could make substantial changes in their sound quality, but we found them impressive enough without attempting to optimize the installation. No doubt there are some homes for which the PS-10's unorthodox configuration is especially well suited, but its compact size and unobtrusive looks should enable it to fit in almost anywhere both aesthetically and acoustically.

—Julian D. Hirsch

Circle 143 on reader service card

Goldring Electro II Phono Cartridge



GOLDRING phono cartridges have earned a reputation for quality and value in Britain, where the company is based. In the past, Goldring has produced conventional moving-magnet cartridges selling for a broad range of prices. Our tests have shown them to be quite comparable with similarly priced cartridges from Japan and the U.S. Now Goldring has entered a new arena with the Electro II, a high-output moving-coil (MC) cartridge rated to deliver 2.5 millivolts (at a 5-cm/s groove velocity) that requires no head amplifier or transformers to be completely compatible with any modern amplifier's moving-magnet (MM) phono input.

As with almost all other moving-coil cartridges, the Goldring Electro II's stylus is not user-replaceable (though if the stylus becomes worn or damaged, the entire cartridge can be replaced at a cost substantially less than that for a first-time purchase). The cartridge's dimensions, mounting holes, and 9-gram weight make it compatible with most tone arms having an effective mass in the range of 8 to 14 grams.

A special feature of the Electro II is its Van den Hul stylus, a line-contact design said to approximate the contours of a cutting stylus more closely even than the Shibata and similar shapes developed in the quadraphonic record era. The advantage claimed for this stylus shape is more accurate tracking of high-frequency groove modulations resulting in wider and smoother response and reduced distortion. The rated frequency response of the Electro II is 20 to 20,000 Hz ± 3 dB, with a channel separation of 25 dB at 1,000 Hz and channel levels balanced within 1 dB.

The equivalent tip mass of the Electro II's stylus system is 0.6 milligram, and its vertical tracking angle is specified as 20 degrees. The vertical tracking force should be between 1.6 and 2.2 grams, with a 1.8-gram nominal rating. Since it is a high-output cartridge, the Electro II should be terminated in the standard 47,000 ohms, with a load capacitance between 100 and 500 picofarads. The d.c. coil resistance is 77 ohms, and the inductance is 0.2 millihenry (both much lower than are typical of moving-

magnet cartridges). The coils are wound with wire having a diameter of only 15 micrometers, making possible the combination of high output voltage with low moving mass.

The Goldring Electro II has a die-cast aluminum structure, and the fit of the mechanical components is so close that no adhesives are used. According to the manufacturer, this very rigid construction results in exceptionally stable stereo imaging. Each cartridge comes with its individual calibration curve and test measurements. Price: \$150. Goldring USA, Ltd., Dept. SR, 1185 Chess Drive, Foster City, Calif. 94404.

● **Laboratory Measurements.** We mounted the Electro II in a low-mass (8-gram) tone arm for testing and listening. The combined arm/cartridge resonance was at about 9 Hz, a nearly ideal frequency, and it was well damped. All measurements were made with a vertical tracking force of 1.8 grams after we checked the effect of higher forces on the tracking ability of the cartridge. (There was at most a minor im-

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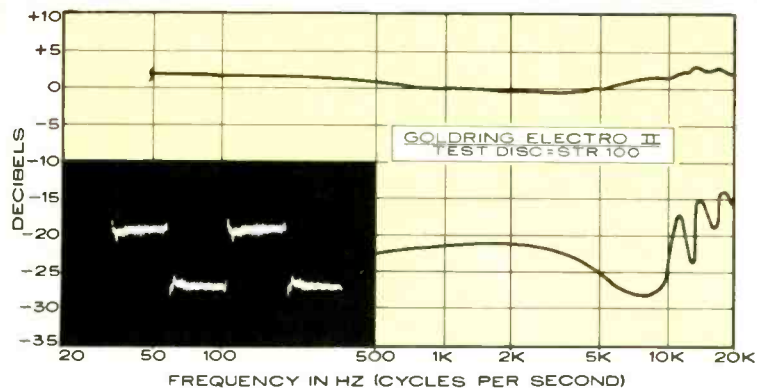
From front end to output jacks, the R-851 offers every feature an audio enthusiast might want. The most commonly used controls are right up front—the more esoteric ones are placed behind a neat flip-down front panel. There's microprocessor-controlled quartz-locked tuning with 14 station programmable memory (7 AM & 7 FM); automatic station seek; 3-band parametric-style equalizer; fluorescent display panel; and two-way tape monitoring and dubbing.

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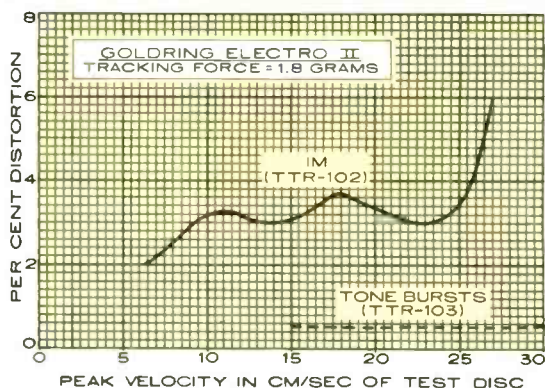
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*85 watts RMS per channel, both channels driven, at 8 Ohms with no more than 0.015% THD from 20-20,000 Hz.



In the graph at left, the upper curve represents the frequency response of the cartridge. The distance (measured in decibels) between it and the lower curve is the average separation between the two channels (anything above 15 dB is adequate). The inset oscilloscope photo shows the cartridge's response to a recorded 1,000-Hz square wave, which indicates resonances and overall frequency response (see text). At right is the cartridge's response



to the intermodulation-distortion (IM) and 10.8-kHz tone-burst test bands of the TTR-102 and TTR-103 test records. These high velocities provide a severe test of a phono cartridge's performance. The intermodulation-distortion readings for any given cartridge can vary widely, depending on the particular test record used. The actual distortion figure measured is not as important as the maximum velocity tracked before a sudden increase in distortion occurs.

provement at 2 grams, the maximum force available with the tone arm we used.)

Following the manufacturer's recommendations, we terminated the cartridge in 47,000 ohms and a capacitance of about 200 picofarads. The output was 1.93 millivolts at a 3.54-cm/s groove velocity. We also checked its performance with much lower resistances and higher capacitances; there was virtually no effect on its response other than some reduction of output voltage with resistances on the order of 100 to 1,000 ohms. The Electro II's performance into a wide range of loads suggests that Goldring recommends a 47,000-ohm load, normally considered suitable for a moving-magnet cartridge, only to emphasize that the Electro II should not be plugged into the MC input of an amplifier. The low input resistance of an MC input would probably have little effect on the performance of the cartridge, but the Electro II's high output would most likely overload the input.

The Electro II's frequency response with the CBS STR 100 test record was flat within ± 1 dB from 40 to 10,000 Hz, then rose slightly and showed some irregularity between 10,000 and 20,000 Hz. The overall response was +2.5, -1 dB over the entire 40- to 20,000-Hz range of the record. The channel separation was 20 to 23 dB through the midrange, increasing to 25 dB from 6,000 to 10,000 Hz and becoming uneven in the topmost octave. Frequency-response measurements with the JVC 1007 and B&K 2009 test records gave similar results. The 1,000-Hz square waves of the CBS STR 112 test record were reproduced with only a single cycle of moderate-amplitude overshoot and ringing. This test produced a nearly ideal "flat-topped" square wave with the over-40-kHz ringing that is one of the characteristics of this record.

The stylus's vertical tracking angle measured 22 degrees. The tracking distortion was measured with the Shure TTR-102 test record (an intermodulation test at velocities from about 7 to 27 cm/s). The distortion readings were around 3 per cent for velocities up to about 25 cm/s, increasing to 6 per cent at the record's maximum level. This represents good tracking performance since there was no obvious mistracking even at 27 cm/s. High-frequency tracking distortion was measured using Shure's TTR-103 test record, which has shaped 10.8-kHz tone bursts at a 270-Hz repetition rate. Here is where the Van den Hul stylus seemed to show its mettle, producing a constant and nearly unmeasurable distortion reading of about 0.5 per cent over the full 15- to 30-cm/s range of the record. It is very likely that 0.5 per cent is the residual distortion of the record with our test setup, and this performance has not been surpassed by any other cartridge we have measured.

The tracking ability of the Electro II was checked subjectively with the Shure ERA IV and ERA V "Audio Obstacle Course" records. With the ERA IV record, we heard traces of incipient mistracking at the highest level (No. 5) of the orchestral bell and flute sections. The three-tone test signal of the ERA V was mistracked slightly on Lev-

el 3. The high-level 32-Hz tones of the Cook 60 record were played so well at 1.8 grams that we reduced the tracking force to only 1 gram—the Electro II still played without mistracking. The 300-Hz portion of the German HiFi:2 record was tracked at the 60-micrometer level with 1.8 grams and at 70 micrometers with 2 grams. These tracking tests indicate that the Goldring Electro II should be able to cope with almost anything one is likely to find on a record.

● **Comment.** We are not especially enamored of moving-coil cartridges in general, since audible advantages of typical low-output MC cartridges are difficult to demonstrate, while their disadvantages are only too obvious (high price, the need for additional amplification, nonreplaceable styli, often a peak in the high-end response, poor tracking ability, etc.). Most of the MC cartridges that we have enjoyed using have been high-output types like the Electro II. These can combine the best of both worlds: the low noise, extended high-frequency response, and total independence of preamplifier-load effects of MC cartridges and the compatibility with standard amplifier phono inputs and more reasonable prices of MM cartridges.

The Goldring Electro II has all these desirable qualities (we exclude user-replaceable styli from the list of criteria, since MC cartridges with that feature often have other weaknesses in their performance). The low resistance of the Electro II virtually grounds the amplifier phono input, resulting in extremely low noise, even at maximum volume settings, with most well-designed amplifiers or receivers. The sound from this cartridge was as good as we have ever heard.

The Electro II is undoubtedly a very fine cartridge, with a clarity and an effortless and uncolored sound that place it well up in our personal ranking. The fact that it sells for what is, these days, a most reasonable price, is yet another attractive feature.

—Julian D. Hirsch

Circle 144 on reader service card





Nakamichi—Commitment to Innovation

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New Audio Technology—



A Report from the Summer CES

By E. Brad Meyer

In its early years, the Consumer Electronics Show (CES)—a semi-annual event where manufacturers exhibit their new products to distributors, dealers, and the press—was mainly devoted to audio. Lately, however, the audio exhibitors at the show have been, by and large, an unhappy lot. Beleaguered by a poor economy, changes in consumer tastes, overproduction, and competition from video, the audio industry had to accept a smaller role in the fast-growing world of video equipment, electronic games, communications devices, and personal computers.

But last year's Summer CES gave hints that the audio business was turning around, and revival was even more apparent at last winter's show in Las Vegas. This summer's CES in Chicago left no doubts that audio is alive and well again. True, video was as big as ever, but the importance of audio *in* video (and vice versa) is increasing as consumers demand better sound from their video equipment and as more and more music performances appear on video discs, video tapes, and cable TV. The new optimism among the audio exhibitors was unmistakable—and clearly justified. After all, people will still want to enjoy music long after their video games have been put away to collect dust in the attic.

The main reason for audio's resurgence is the introduction of the digital Compact Disc, whose influence—direct or indirect—was visible in every category of equipment at the show. Their selling price of \$800 and up puts CD players well into the high-end category for playback-only devices, and there is as yet relatively little music to play on them. Nevertheless, the possibility of delivering to the average consumer audibly perfect replicas of original master tapes seems to have everybody thinking new thoughts. Every new preamplifier, power amplifier, FM tuner, cassette deck, receiver, and loudspeaker in sight was touted as "digital-ready," and the products that cannot be used in conjunction with CD's—analogue turntables, tone arms, and cartridges—were all being improved to meet the challenge of the digital system's performance.

What has happened, in fact, is that once again the best audio "hardware" (the playback equipment) is notably superior to most of the "software" (the program material) available for it. The CD system is not the only technologically exciting new audio medium. There are also digital-audio adaptors for conventional video-cassette recorders (from Sony, Technics, and others, with prerecorded PCM-encoded VHS-format cassettes from Mobile Fidelity [see page 76]), two video-disc systems

with stereo sound and CX noise reduction (LaserVision and CED), and two systems of recording high-fidelity audio with video on video cassettes (Beta Hi-Fi and its new VHS equivalent, which was exhibited at this show and is described below). In the near future we can also expect to see PCM-encoded audio cassettes as well as small, portable "8-mm" video-cassette recorders that can record PCM-encoded audio along with video.

How well all these new formats succeed in the marketplace will depend, as always, on how attractive the program material for them turns out to be. The disappointed reaction to the sound of many early Compact Discs—which was largely justified—shows what can happen when advances in recording practices don't keep up with developments in recording and playback technology.

The big question for the moment, however, is whether today's home stereo systems are adequate to the playback challenges posed by the new media. That's one of the things we concentrated on at the show, and we'll report our conclusions in each category below. What's clear in any case, though, is that the Compact Disc and other advanced systems have galvanized the hi-fi industry into making changes in other equipment that will help even good old analog LP's sound better. So even if you have no plans to invest immediately in one of the new formats, there is still reason for good cheer.

Instead of a tedious list of every new product in every line from every manufacturer, we've provided an overview of trends in each product area along with illustrative examples. More detailed information about many of the products introduced at the Summer CES has already begun appearing in STEREO REVIEW's "New Products" pages, and test reports on some of the more significant items will appear in future issues—besides those included in this one.

The Compact Disc

The medium that is causing most of the fuss has two big obstacles in the way of mass-market acceptance: the players and the discs are too expensive, and there aren't enough discs. The anxiously awaited downward price break was nowhere in evidence at the show; in fact, most of the so-called second-generation players are *more* expensive than the early models, selling as they do for between \$1,200 and \$1,400. Besides the eleven first-generation CD players STEREO REVIEW tested for the July issue (Hitachi, Kenwood, Kyocera, Magnavox, Mitsubishi, Phase Linear, Sharp, Sony, Technics, Toshiba, and

Yamaha), players were shown by Akai, Dual, Fisher, Luxman, Marantz, NEC, Sansui, and Sanyo.

As for the software: there are now several CD pressing plants in operation in Japan and Europe, but CBS's American facility won't be on line until late in 1984. Overseas customers are buying about three times the number of discs per player sold than was predicted by Philips's original marketing studies, which means that there aren't many left over for export to the U.S., so the flow of discs from overseas will be slow. A wild-card entry in the CD pressing business, a Virginia company called Digital Images, may ease the situation somewhat, however.

At the show a Chicago record-store chain passed out a list of more than a hundred CD titles they claimed to have in stock, with a like number due to arrive within the month. A quick trip to the branch nearest the Conrad Hilton hotel downtown revealed less than half that number remaining, and most were selling for \$21.95, well above the going price in most of Europe and Japan (around \$17).

The Recording Industry Association of America (RIAA) has formed a Compact Disc Group to publicize the medium and issue comprehensive catalogs. Members of this industry group include software producers—Arista, Capitol, CBS, Chrysalis, PolyGram, RCA, Telarc, and Warner Bros. A consumer hotline has been established for those wanting further information; the number is (212) 355-6947.

The first CD's on the Telarc label appeared at the show as demonstration material for various exhibits, with the Atlanta Symphony recording of Stravinsky's *Firebird* Suite getting a particularly good reaction (and rightly so; it sounds magnificent). Frustratingly enough, however, none of the company's CD's were officially available for sale, and exhibitors were requested to return them when the show was over.

There were CD players at the booths of every major manufacturer on the show's mammoth main floor in McCormick Place, in almost all of the demonstration suites in the McCormick Inn across the street, and in a surprising number of the rooms across town at the Conrad Hilton booked by the specialist audio companies, which used CD's to demonstrate loudspeakers, amplifiers, and other components. Audio writers are always advising people to listen to new equipment using familiar program material, and the "favorite CD" seems to have replaced the "favorite cassette" with many members of the audio press (except those covering car stereo, of course). It's a practice that ordinary hi-

fi shoppers can also follow. A couple of CD's will slip easily into a coat pocket and make an extremely consistent portable reference source with wide dynamic range and very low distortion.

This test assumes that CD players sound pretty much alike, which they do; the audible differences among them are vastly less than between analog phono cartridges or tape recorders. But there *are* differences in "tracking ability." I carried around a defective CD that causes my own player to mute briefly in certain places and tried it on every machine I could find at the show. Most had no problems with it, but a couple actually stuck or skipped, underscoring the importance of evaluating that aspect of any player before you buy. I also noticed major differences in the ease with which different players could cue up the defective section on the disc.

Electronic Components

The electronics in audio systems will have to change in several ways to accommodate both CD players and high-fidelity video hardware. At the very least, preamplifiers, receivers, and integrated amplifiers will need additional inputs and switching facilities. Most input-selector switches on the new equipment have a position labeled CD or DAD (for Digital Audio Disc); some even read VIDEO/DAD. In almost every case, however, this position does not represent an additional high-level input but is a simple relabeling of a previously existing AUX input.

There were exceptions, however. A high-end Technics preamp (the SU-A4MK2, \$1,100) has three phono inputs, a tuner input, and a second line-level input labeled CD/AUX/VIDEO. The last position actually covers three pairs of input connectors; the pair in use is selectable by pushbuttons behind a door at the bottom of the front panel. And the preamplifier in Tandberg's improved 3000A series of components has a DIGITAL DISC input for which the usual buffer amplifier has been removed in order to prevent overload on loud transients.

Despite the need of an additional input for digital-audio and/or video signal sources, it seemed at the show that the trend toward an excessive use of pushbuttons has fortunately been halted. Pioneer, for example, has restyled its entire line of electronic components, and the volume control on the new units is once again a knob.

The proliferation of wireless remote controls in audio and video cassette recorders and TV sets has accustomed the American consumer to the convenience of chair-side operation. Remote con-

trols first appeared on single-brand audio systems a couple of years ago and are now spreading to separate components. The usual system design involves the installation of an infrared sensor in one component, either an integrated amplifier or receiver, which then serves as the control center for the other parts of the system. Revox has taken a slightly different tack with a remote unit that can directly control either a new model integrated amp or a tuner. With an add-on interface it can be adapted to control Revox's older receiver, turntable, cassette deck, or B77 open-reel deck as well.

If you like the idea of remote control but don't want to buy new components, consider AR's new SRC-1 add-on wireless remote unit for under \$150. Connected in a tape-monitor loop (or between the preamp and power amp), it controls power on/off, volume, balance, and partial or full muting as well as providing a tape-monitor loop to replace the one it occupies. The unit has an audiophile-quality buffer amplifier followed in the signal path by a microprocessor-controlled resistor-ladder attenuator, and it has a signal-to-noise ratio greater than 90 dB.

Greater control versatility is provided in many new units through the use of internal microprocessors—computers, if you will—both to control the audio signal and to store information. In addition to the computer-run tape-matching circuits used in some cassette decks for several years, many FM tuners now continuously control i.f. bandwidth with a microprocessor that actually monitors signal-reception conditions.

Similarly, there are power amps that automatically adjust the bias on their output stages to compensate for changes in heat-sink temperature. In the Revox B251 integrated amplifier, a microprocessor with a nonvolatile memory is used to set and store the gain levels of each of seven input-buffer amps in order to match levels between inputs. Other new amplifiers and receivers have computer-controlled volume and tone-control circuits.

The Compact Disc has had a big impact on manufacturers of power amplifiers and receivers, who are making significant improvements in their products' ability to deliver the high peak currents that loudspeakers require for wide-dynamic-range musical passages. Harman Kardon emphasized this factor in its entire receiver and amplifier line, including the 100-watt-per-channel (W/ch) hk870 basic amplifier, which costs \$500 and is said to be able to put out 60 amps (!) for brief periods. Many receiver makers are finally starting to publish power ratings for 4- and even 2-ohm loads.

It is possible to use some ordinary stereo power amplifiers in what is known as a "bridged mode," in which the two audio channels are used to drive a single speaker. This mode requires two complete stereo amplifiers for normal two-channel operation, but it can multiply the total available power by up to four times. A new Soundcraftsmen amplifier equipped to operate in this manner is the DDX410 (\$450), which delivers 205 W/ch into any impedance from 2 to 8 ohms or 500 watts (mono) into 8 ohms in bridged mode. The unit's

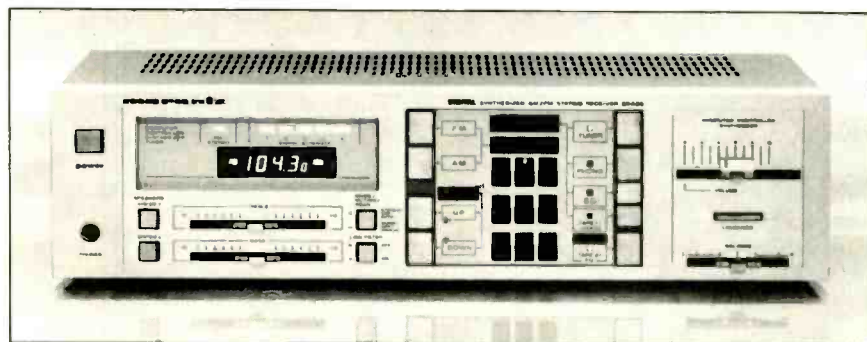
switching power supply gives undiminished performance at line voltages as low as 95 volts and also helps keep the total weight down to 16 pounds. Another new model with a good power-to-weight ratio is the Carver receiver (\$700). Rated at 130 W/ch continuous, it weighs only 17 pounds. It has the same noise-reduction circuits as the Carver TX-11 tuner and a VIDEO/DAD input (but none labeled AUX).

Few radio stations can broadcast Compact Discs with anything near their full dynamic range and potential channel separation, but that hasn't stopped tuner manufacturers from improving the performance of their designs to be able to cope with such broadcasts. As with other CD-inspired changes, many of the improvements are worthwhile in themselves.

One of the most notable is from Pioneer, whose \$300 F-90 tuner features Digital Direct Decoder circuitry. Originally developed to give lower distortion and better separation at high frequencies, the new stereo decoder circuit provides the unexpected benefit of substantially better selectivity, which is important in many American urban locations with crowded FM bands. The alternate-channel selectivity of the F-90 is 85 dB, a 20-dB improvement over Pioneer's better previous designs.

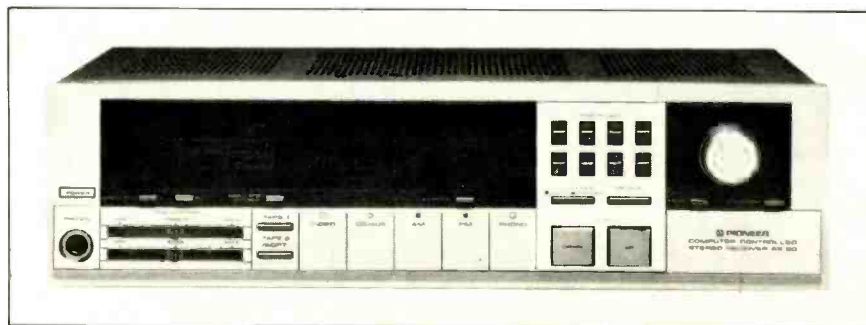
For \$1,500 the Revox B261 offers a host of special convenience features. The front-panel liquid-crystal display can be switched to show either the tuned frequency or a preprogrammed four-character station name. Each of the twenty preset memories stores not only the frequency (in 12.5-kHz steps if necessary) but also the settings of the controls for i.f. bandwidth, stereo/mono, high-blend, and a choice of two antenna inputs. Carver Corporation is selling an add-on adaptor to give any FM tuner the improved stereo performance of Carver's own TX-11. The new unit is the TX1-11 (\$250) and connects between the tuner and preamp or in a tape-monitor loop.

The situation continues to be both confused and confusing for stereo AM. There are currently no fewer than four FCC-approved stereo-AM broadcast



Marantz introduced a line of receivers with Compact Disc and video inputs. The SR430 (\$300) shown here offers 30 watts per channel of power and digital-synthesis tuning.

Pioneer's SX-50 digital receiver (\$375) also has CD and video inputs. It uses a familiar volume knob and slider tone controls instead of the often finicky microprocessor touch buttons.



Polk's Revolutionary SDA Technology Patent Pending Is Now More Affordable

POLK
Reference
Quality Automotive
Loudspeakers are available!



It Makes Your Music Come Alive

The Second SDA

Polk SDA series loudspeakers are totally unique both in design concept and sonic performance. SDA technology combines the sonic advantages of headphones and loudspeakers. The SDA's achieve dramatically improved spatial fidelity, three dimensional imaging and depth by allowing each ear to hear only one speaker (like headphones) rather than two (like conventional speakers). This technological triumph results in a quality of sound so astonishingly real that your music will seem to literally come alive in your room.

The SDA-1 (\$850) which was introduced

last year received unprecedented rave reviews and many prestigious awards including the Hi Fi Grand Prix-Product of the Year. High Fidelity said that the SDA-1 would help "change audio forever" and Stereo Review raved "quite literally a new dimension in the sound." Now the dramatically audible benefits of SDA technology are available to you in a more affordable loudspeaker, the SDA-2 (\$599.95).

High Fidelity said that the SDA-1 was "mind boggling, astounding and flabbergasting"; so is the SDA-2. You must experience the sonic benefits of the Stereo/Dimensional technology for yourself. Your ears will thank you.

Write to us or use the readers service card for information on our incredible sounding loudspeakers (priced from \$99.95 to \$850) and the name of your nearest authorized Polk dealer.

Polk Audio, Inc. 1915 Annapolis Rd., Baltimore, MD 21230. In Canada: Evolution Audio.

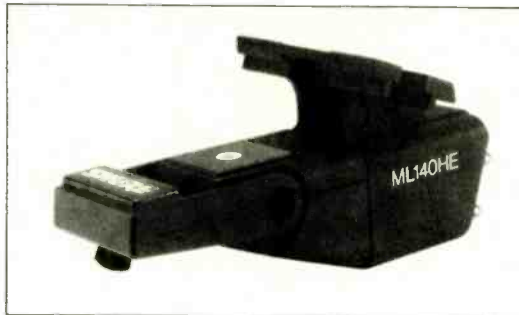
Digital Disc Ready

polk audio.

The Speaker Specialists

CIRCLE NO. 37 ON READER SERVICE CARD

Shure has redesigned its whole line of cartridges. Shown is the low-mass ML 140HE (\$190), which features a new version of the company's dynamic stabilizer.



schemes. The Sansui TU-S77AMX AM/FM tuner (\$400) circumvents the compatibility problem by being able to decode all four. Sony has a similar circuit in a new portable radio, the SRF-A100 (\$90).

The clarity with which any high-quality recording reveals such flaws as bad microphone technique, excessive equalization, noisy tape recorders and mixing boards, and sloppy mixing or editing increases the need for judicious playback equalization. There were many new octave-band equalizers at CES, some at very low prices, such as the AudioSource EQ-four (\$180) and the JVC SEA-33 (\$160).

A low-cost equalizer with a built-in octave-band analyzer was shown by Technics, whose SH-8055 (\$340) has a pink-noise generator and a microphone input for testing either tape recorders or loudspeakers, as well as two extra bands for increased resolution in the bass. The most complex new octave equalizer at the show was JVC's top-of-the-line SEA-R7 (\$400); it combines equalization with adjustable time delays to add spaciousness to the stereo image. On the bottom of the front panel

are two DEPTH controls to regulate the delay and recirculation for each channel, and there is a separate set of five-band equalizers covering just the bass and midrange for the reverb signal. A switch-selectable "cross" mode inverts the phase of the delayed signals and mixes them into opposite channels for an even more spacious effect.

Turntables and Cartridges

Just as the introduction of digital mastering recorders for professional use spurred many promising improvements in the performance of professional analog mastering recorders, the advent of the Compact Disc has prompted improvements in the performance of analog turntables. Especially important is the increased attention being paid to acoustical and mechanical isolation, problems affecting CD players only to a very small degree.

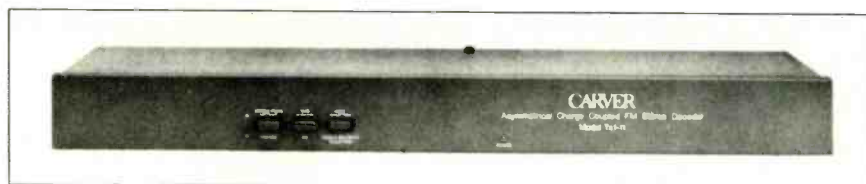
The most popular (and cost-effective) way to achieve good isolation has been to put the platter and tone arm on a separate subchassis suspended by soft springs from the turntable base. Since it was first used on a Magnavox turntable

in the Fifties, this approach has been used effectively by AR, Thorens, Linn/Sondek, Philips, Oracle, and SOTA, to name a few. In various forms, it is now appearing on low- and mid-priced Japanese models from Onkyo, JVC, and others. Notable among these is the Luxman PD-375, which also has an automatic vacuum-pump system to clamp the record tightly to the 7.7-pound platter. It's available with a medium-mass tone arm for \$500.

Meanwhile, the venerable AR turntable has reappeared. In many ways very similar to the original model, it has a small, low-torque motor coupled to the platter by a soft belt. There is a new walnut base and a hinged dust cover; a medium-mass straight tone arm is included in the \$430 list price. The unit can also be bought without the arm for \$300.

One analog-turntable manufacturer struck back at the approaching CD threat. At the show Linn/Sondek set up an A/B comparison between selected CD releases and their analog LP counterparts. The recordings they chose (I heard a popular release by Roxy Music and the Maazel/Cleveland Orchestra Beethoven Ninth) were harsh sounding and overly bright in their CD versions, being pretty typical of close-miked, badly equalized recordings, so the Linn cartridge, with its slight upper-midrange frequency-response trough and top-end rise, *did* make the analog versions sound more pleasant, though slightly compressed. The company's representatives state their case much more strongly than that, however, claiming that digital encoding so alters the sound that "you can't recognize either the tune or the tempo"!

The linear-tracking tone arm—formerly only a high-ticket, deluxe audiophile feature—continues to fall in price. The ADC LT-30 linear-tracking turntable comes complete with P-mount cartridge for under \$100. Also



The Carver TX-11 (\$250) is an add-on component with the same circuitry that gives the Carver TX-11 tuner its outstandingly low noise and distortion-free reception.

Revox's B 261 FM tuner (\$1,500) displays either the frequency or the call letters of the tuned station. It has twenty programmable presets and many other unusual features.



becoming cheaper are tone arms that adjust such parameters as tracking force, damping, and antiskating with electronically controlled servomotors. Denon introduced two new turntables with servo-controlled tone arms, the DP-45F (\$350) and DP-35F (\$300). The P-mount cartridge-installation system picked up new adherents in Akai, Hitachi, JVC, and Sharp, and P-mount cartridges are now available from most major manufacturers, including Empire, Shure, Stanton, Audio-Technica, and ADC.

The most interesting-looking method for damping tone-arm/cartridge resonances appeared on a turntable from Elite/Townsend known simply as "The Rock." Attached to its tone arm is a small cylinder that projects downward into a liquid-silicone bath. Earlier "paddle-damped" arms have had the paddle attached near the pivot; this one is on the very end of the arm near the cartridge. The trough of silicone extends out over the record and must be swiveled out of the way to load a record onto the turntable.

Speaking of rocks, the Entec Granite Turntable has a *solid granite* platter and base. The 35-pound direct-drive platter is suspended on an air bearing, and the base has its own pneumatic suspension system. (A small air pump sits in the next room and is connected to the table by a long, thin hose.) Price, without arm, is a monolithic \$4,500.

The big news in cartridges is that Shure Brothers has introduced a whole new line, dropping every one of their

old models except the top one, the V-15 Type V. And even that model has been upgraded to the V-15 Type V-MR, with a "Micro-Ridge" stylus tip that provides a taller and narrower groove-contact area than the old hyperelliptical stylus. Many of the new Shure models (and some from ADC and others) are P-mount designs but come with adaptors allowing them to be mounted on conventional arms.

The first moving-coil cartridge from Goldring, the Electro II, is now available for a list price of \$300 (see test report on page 52). It is a high-output model requiring no head amp, and it has a Van den Hul stylus (another very narrow-contact-area design) fixed to the cantilever without adhesives.

Tape Recording

Digital PCM tape decks using standard-sized (or smaller) audio cassettes are still a year or two away (see "Audio/Video News," page 30). In the meantime, tape-deck manufacturers want to give their customers a recording medium capable of dubbing Compact Discs with as close to full dynamic range as possible, which is why more effective noise-reduction systems—Dolby-C and dbx—are becoming more prevalent. Undergoing a resurgence in popularity is the Dolby-HX Professional headroom-extension system, previously used only by Bang and Olufsen but now appearing in machines from Aiwa (see test report on page 37) and Harmon Kardon as well. Tandberg's

\$1,395 TCD 3014 deck can also record the full audio bandwidth at a 0-dB level thanks to a combination of Dolby-C and the company's own Dyneq system of dynamically variable record pre-emphasis. In the dbx camp are Luxman, with the KX-102 (\$1,000), and Technics, which now provides dbx noise reduction in addition to Dolby-B and Dolby-C in its entire line down to the \$220 RS-M234X.

Increased mechanical reliability in auto-reverse transport mechanisms has encouraged Yamaha, JVC, and others to introduce models with that feature. Some of these, such as JVC's three-head DD-V9 (\$800), record and play in both directions. Other interesting auto-reverse machines include the Sansui D990R (\$650) with Dolby-B, Dolby-C, and dbx noise reduction, the Yamaha K-700 (\$495), Pioneer's CT-90R (\$520), and Akai's GX-R6 (\$399).

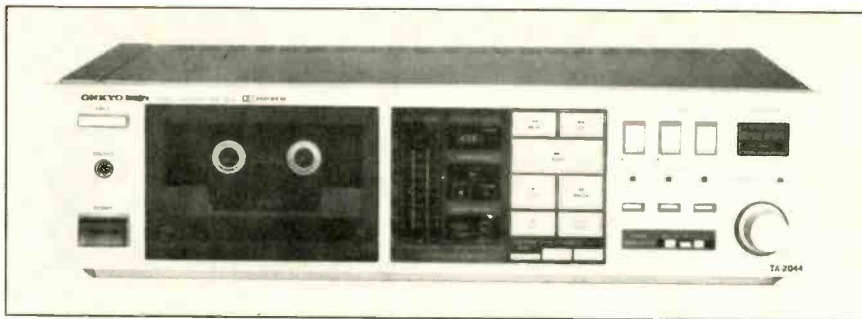
Technics offered two versions of a PCM digital adaptor for audio recording on Beta- or VHS-format video cassettes. The portable version, the SV-100, which carries its own rechargeable



Crown showed a PZM-style microphone, the Sound Grabber, that can either be hand held or used with a stand as shown. Prices start at \$99.

Denon introduced two lower-priced relatives of its DP-52F turntable: the DP-45F (shown, \$350) and the DP-35F (\$300). Both models have the same microprocessor-controlled servo-tracer tone arm.

The cassette-deck field is very active. Automatic music search systems have become very popular, such as that included in this Onkyo TA-2044 Integra model (\$300).



battery, is \$900; the plug-in home model, the SV-110, is \$800. The adaptor is specifically designed to work at the extra-slow, six-hour recording speed of the VHS system. There is a single knob for fading both record channels, and with either version the user can switch off the playback muting to scan audio cassettes at high speed.

Akai and Teac both introduced interesting open-reel decks equipped with dbx Type I noise-reduction circuitry. While this is a very effective system, it is generally intended for professional use (as is Dolby-A), and it demands better low-frequency performance from the tape recorder than the dbx Type II system that is used in all of dbx's own consumer-level products and in all other dbx-equipped home audio products. The two systems are completely incompatible. Both the Akai GX-747 dbx and

the Teac X-1000 take 10-inch reels, run at either 3³/₄ or 7¹/₂ ips, and can use the new EE-type tapes. With EE tape and dbx I noise reduction, 7¹/₂-ips operation is said to yield signal-to-noise ratios in excess of 100 db and frequency response out to 30,000 Hz. The Akai deck records or plays in both directions; auto-reverse takes only 0.4 second.

Recording tape continues its gradual evolution with the introduction of higher-grade audio and video tapes from many manufacturers. (One surprise: VHS tape from Sony.) It is apparent, however, that both the digital audio cassette and the new "8-mm" video format will require new tape formulations if they are to work reliably. The specification for the narrow-tape video format includes the option of one PCM audio channel recorded along with the video signal.

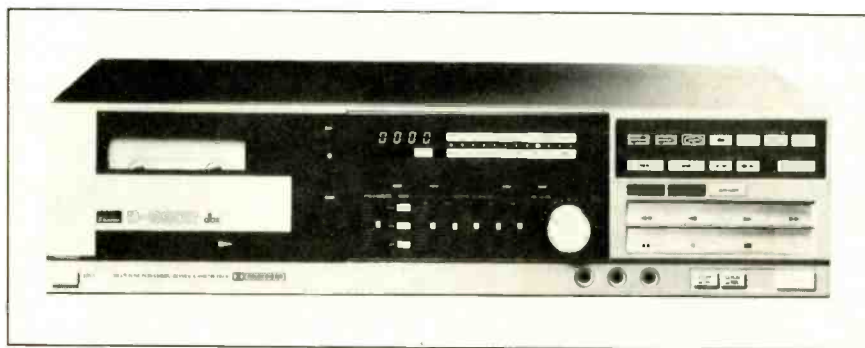
TDK gave a seminar at the show to discuss the new tape technologies. Among the topics was the prospect of vertical recording, a method in which the magnetic domains in an evaporated-metal-film coating are aligned perpendicular to the surface of the tape. At present the system requires pole pieces on both sides of the tape, but it must eventually be made to work with single-sided heads. Vertical recording promises tremendous increases in the amount of information that can be stored on each square inch of tape.

New tape formulations were introduced by Maxell, Denon, Konica, and 3M, and just about every other tape manufacturer announced improvements in their current formulations.

Loudspeakers

Like amplifiers, loudspeakers will be sorely taxed by the loud deep bass and wide dynamic range of Compact Discs. And, as with power amplifiers, all the speaker manufacturers at the show promised that their products were ready to meet the challenge. Methods used to increase power handling include increased efficiency, separate subwoofers (or other extra low-frequency drivers), internal bi-amplification, electronic equalization, and plain old brute force (that is, heavy-duty drivers).

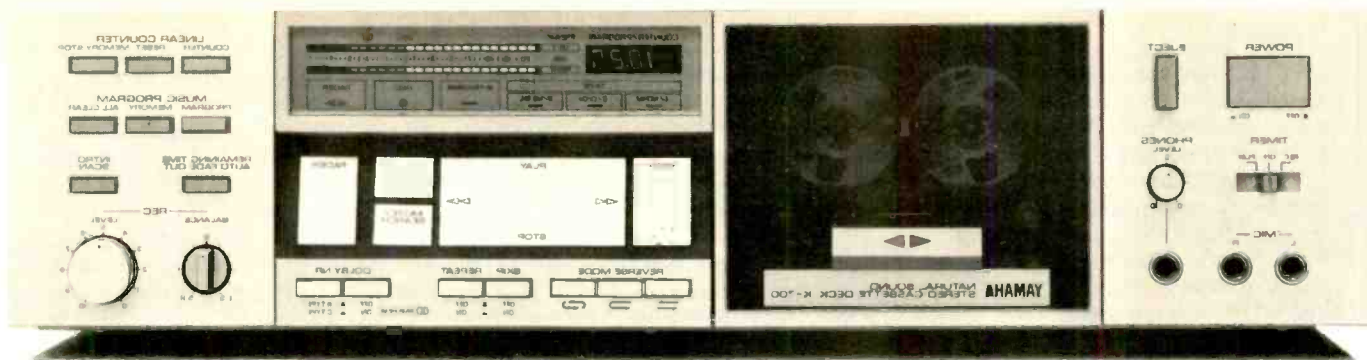
(Continued on page 66)



Sansui's D-990R cassette deck (\$650) is well supplied with features: auto-reverse, three noise-reduction systems (Dolby-B, Dolby-C, and dbx), blank selection search, remote control, and a built-in five-band equalizer.

Almost all the tape companies showed new or upgraded formulations. Fuji's new GT-1 cassettes are said to be specially formulated for car use.





THE REVERSE IS ALSO TRUE.

Most audio manufacturers don't provide for automatic azimuth adjustment in their auto reverse cassette decks. So side B never sounds as good as side A. Yamaha doesn't do things like most audio manufacturers. Introducing the K-700 auto reverse cassette deck. The only one that sounds as good as a Yamaha – in both directions.

To insure reproduction accuracy, we developed a special high-precision rotating head mechanism that permits precise, independent adjustment of head azimuth in both directions. And the head itself is the same pure Sendust type used in our top-of-the-line deck. The result is uncompromised sound quality with auto reverse convenience.

But that's just the beginning of the K-700's convenience. During recording, the K-700 counts down remaining tape time, automatically fades out at the end of the tape, then automatically fades back in after the tape is reversed and continues recording. Another fader button allows professional sounding fade-ins or fade-outs at any point during recording. You can also preprogram up to 15 selections to be recorded or played back in any order.

Then there's Intro Scan, Search, Blank Skip, Repeat, Auto Source Change, Auto Tape Selector, Dolby* B and C, Real-time Digital Counter, and an optional remote control unit.

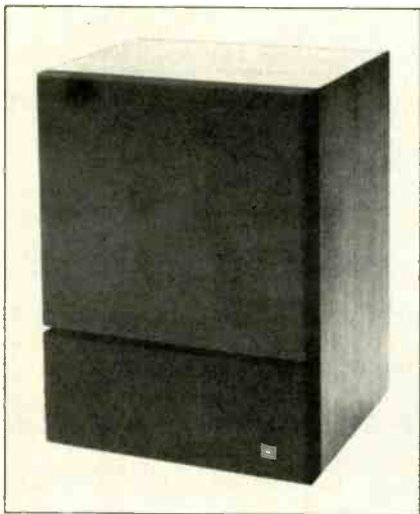
How much for all this? Much less than you'd expect to pay for this much deck. The K-700. It's all true. Find out at your Yamaha dealer. Or write for complete information: Yamaha Electronics Corporation, USA, P.O. Box 6660, Buena Park, CA 90622.

*Dolby is a registered trademark of Dolby Labs, Inc.

More than any other components, speakers must be heard to be appreciated, and there are always far too many new models at any CES to describe in a reasonable amount of space. We'll have to summarize by saying that interesting new models were shown by Infinity, Snell, Polk, Boston Acoustics, Spica, Beveridge, Fourier, Allison, AR, Varis, Celestion, Thiel, Electro-Voice, and ADS—among others.

The most efficient speakers use horn-loaded designs, and the industry's oldest maker of horn-loaded loudspeakers is Paul Klipsch. Although the Klipschorns are perhaps as certifiably "digital-ready" as any other speakers at the show, their maker reportedly didn't like the sound of the CD's he heard (there are lots of bad ones) and refused to use them for his demonstrations.

One loudspeaker that generated a great deal of praise wasn't even on official exhibit: the Apogee Acoustics Full-Range Ribbon. These large planar arrays offer the imaging and detail of an electrostatic system, but they can play louder and go lower and they're easier for amplifiers to drive. Each unit has three separate 6-foot-high ribbon drivers; a pair sells for around \$6,500.



There were probably more new speakers on display at the show than any other product category except video games. Subwoofers were popular. The JBL B380 above retails for \$495.

Many of the Japanese speaker makers have been introducing models that they hope will be more pleasing to Western ears, such as the Yamaha Natural Sound NS-2000 (\$3,000 per pair).

Outboard speaker equalizers, to be connected between a preamp and power amp, appeared in high-end designs from Thiel and Infinity. The equalizer can give deeper or louder bass from a small- or medium-sized cabinet but requires extra amplifier power (a factor of ten for a 10-dB boost). Another way to increase output capability is to divide the frequency spectrum and provide power amplifiers for the separate bands. Internal biampification was offered as an option by ADS and as standard equipment in the huge KEF KM-1 Studio Monitor, which at \$35,000 per pair (as shown at CES) won the high-price contest by a small margin over the even larger Infinity Reference Standard.

If you like your present speakers but need more bass output, you can add a subwoofer or two. JBL's new B380 covers the range from 25 to 70 Hz with a single 15-inch driver and costs \$495. If money is no object, the Entec subwoofers have three drivers and a 250-watt power amp in each cabinet; you can buy a pair for \$3,495. (Even the Entecs were pushed to their limit by Keith O. Johnson's new percussion record on the Reference Recordings label; it's sure to be the new favorite among sonic-blockbuster fans, replacing Tchaikovsky's *1812 Overture*.)

In a multi-driver loudspeaker, each driver is supposed to cover a specific part of the frequency spectrum. Most speaker systems use crossovers that attenuate the sound of each driver outside the desired band of frequencies by 6 or 12 dB for each additional octave, resulting in considerable audible output beyond the nominal limit. The last year or so has seen speakers with 24-dB-per-octave crossover slopes, and now the

JSE Corporation has introduced its "Infinite Slope" loudspeakers with effective crossover slopes in excess of 100 dB per octave. The directional characteristics of the system are effectively those of its individual drivers. (The JSE Model 2 sells for \$900.)

A complex, experimental loudspeaker system with fourteen drivers per unit was shown privately by dbx. Designer Mark Davis said it could not have been produced without the aid of a computer. It features an extremely uniform (though unusual) dispersion pattern throughout the frequency range, a property that speaker designers have previously regarded as desirable but hopelessly out of reach. The speaker as shown in Chicago is not yet ready for commercial release, but its imaging properties are quite remarkable, and the concepts it embodies show great promise.

Many other designers are making use of computers in their work for such things as calculating component values for crossovers or measuring the performance of experimental systems. The computer speeds up the traditional trial-and-error process of speaker design by orders of magnitude, and it offers the capability of using more complex mathematical models that take into account the actual physical behavior of drivers, as opposed to their simpler theoretical performance. The resulting improvements in the smoothness and accuracy of the finished products were audibly evident everywhere; they are real and significant.

Video Sound

Many new audio components have line-level inputs labeled VIDEO, but they





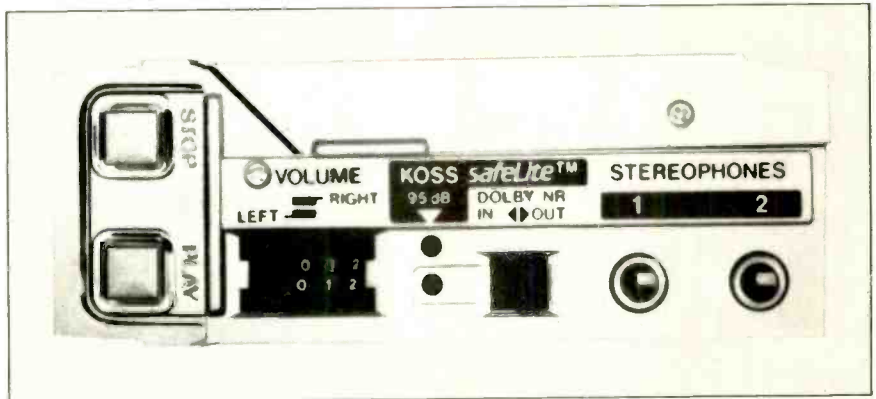
Surround Sound's M-360 decoder (\$329) extracts the special sound-effects and ambience information from movie soundtracks recorded with the four-channel Dolby process.

All the new Koss personal stereos include a "safelike" feature that warns the user when the sound-pressure level at his ears exceeds 95 dB.

accept only sound, not pictures. An example of the kind of component that will serve as a full link between audio and video systems is the ADC VSS-2 Video Sound Shaper. Connected in the audio system's tape-monitor loop, it enables a user to listen to the video program's sound through his audio system as well as providing audio/video interconnections for three video sources, permitting dubs with simultaneous fade in and fade out of both picture and sound. For instance, you can dub sound from an audio cassette onto video tape and mix in narration using the built-in microphone preamp. The \$400 unit also provides dynamic-range enhancement, de-hissing, five-band equalization, and pseudo-stereo synthesis to enrich otherwise lifeless video sound.

Just as big-band jazz moved from the dance hall to the radio and the phonograph in an earlier part of this century, rock video is slowly moving from the discos to the home via cable services such as MTV and on standard video cassettes, video discs, and "video 45's," short video cassettes with high-quality stereo audio. So far, however, the only medium with high-fidelity sound in which this material is available is Beta Hi-Fi, Sony's system of recording two FM audio carriers along with the video signal. Unfortunately, Beta Hi-Fi suffers from the same software problems as the Compact Disc system, only more so. Its sonic potential is higher than much of the software available achieves, especially movie soundtracks, and the supply of material has so far been short in quantity and uneven in quality.

Hope still remains, however, that the home viewing experience can be accompanied by true high-fidelity sound. What we can expect when that happens was foreshadowed in a demonstration put on jointly by NAD and Proton, companies known for spectacular audio/video demos at Consumer Electronics Shows. We weren't disappointed this year. They showed the first reel of *Raiders of the Lost Ark*, care-



fully transferred to a 1-inch professional video tape, with the Dolby-A-encoded stereo soundtracks played through a surround-sound decoder and a four-channel audio system. The sound quality (not to mention the picture) was phenomenally good. The presentation actually suffered somewhat from the disparity between the spectacularly huge sound and the 19-inch picture. The visual limitations of the U.S.-standard NTSC video system were definitely stretched by this source material.

Beta Hi-Fi offers a storage/retrieval medium with sound quality good enough that serious amateur recordists would do well to consider it for audio-only applications. Sanyo has recognized this potential in its VCR-7300 (\$995), which has an AUDIO-ONLY switch that turns on a built-in sync-pulse generator to allow recording without any video input. Using an L-830 cassette at the Beta III speed gives 5 hours of continuous sound recording for a tape cost of about \$12. The VCR-7300 looks like an oversized portable radio; it measures only 14½ inches in its largest dimension and weighs only 15 pounds with battery. It can be powered from the a.c. line, a 12-volt d.c. source (such as a car battery), or a Ni-Cad battery pack. Other Beta Hi-Fi units were shown by NEC and Toshiba.

Meanwhile, the VHS camp has been busy cooking up its own version of high-fidelity stereo sound on video tape. The

new system is already offered for sale in Japan by Matsushita; a similar (and, we were told, compatible) version was shown privately at the CES by JVC. Rather than take up room between the chrominance and luminance signals in the video frequency spectrum (as Beta Hi-Fi does), the VHS scheme uses an entirely separate set of frequency-modulated audio record/play heads mounted on the rotating drum between the two sets of video heads. The audio is not recorded on an adjacent track but *underneath* the video tracks; the audio is recorded first, and the video is laid down over it. The video material gets recorded nearer the surface of the tape coating so that the underlying audio is not erased by the video recording process. The technique is called d-mpx (for depth-multiplex).

The demonstration of the hi-fi quality of the new VHS system was convincing. Contrary to earlier denials, the JVC version uses the same dbx Type II noise reduction as Matsushita's. As with Beta Hi-Fi, the main problem with getting the system accepted in the marketplace will be in the area of software, not hardware. But, as we said at the beginning, that's the situation faced by all the technologically advanced media at this point. In the continuing, ever-shifting race between hardware and software to ride the leading edge of technological development, it's software's turn to catch up. □



C37-7001 BEETHOVEN SYMPHONY NO. 5 in C Minor, Op. 67
Otmar SUITNER conducting
STAATSKAPELLE BERLIN



38C37-7026 HANDEL TRIO SONATAS
Heinz HOLLIGER, oboe



C37-7003 MOZART STRING QUARTET
NO. 17 in B Flat Major, KV 458 "HUNTING"
NO. 15 in D Minor, KV 421
SMETANA QUARTET



C37-7004 DIE GROSSE SILBERMANNORGEL
DES DOMES ZU FRIEBERG
J.S. BACH
Hans OTTO, organ



38C37-7011 BEETHOVEN: SYMPHONY NO. 3
"EROICA" in E Flat Major, Op. 55
Otmar SUITNER conducting
STAATSKAPELLE BERLIN



38C37-7013 ANTONIO VIVALDI: THE FOUR SEASONS
Gunnars LARSENS violin
Rudolf BAUMGARTNER: direction
FESTIVAL STRINGS LUCERNE

**TO DECIDE
WHICH
CD PLAYER
IS BEST,
MAKE THESE
YOUR
REFERENCE
CD'S.**



38C37-7032 BEETHOVEN NO. 7 in A Major, Op. 92
Otmar SUITNER conducting
STAATSKAPELLE BERLIN



38C37-7033 BEETHOVEN STRING QUARTET NO. 8
in E Minor, Op. 59, NO. 2
RASOUMOVSKY NO. 2
SMETANA QUARTET

Analog or digital, a system is only as good as its signal source. When it comes to recording digitally, one company stands out from the rest—with over a decade's more experience than most of its competition.

Denon is credited with having introduced digital technology to the field of audio in 1972. For over a decade Denon continually has refined PCM recording technology to a point where fifth-generation Denon professional PCM recorders are currently in use in Denon's own recording studios.

During these exciting years, Denon has

digitally recorded over 650 titles, and in the process has captured many of the most critically-acclaimed performances of the world's greatest music with sonic accuracy second to none.

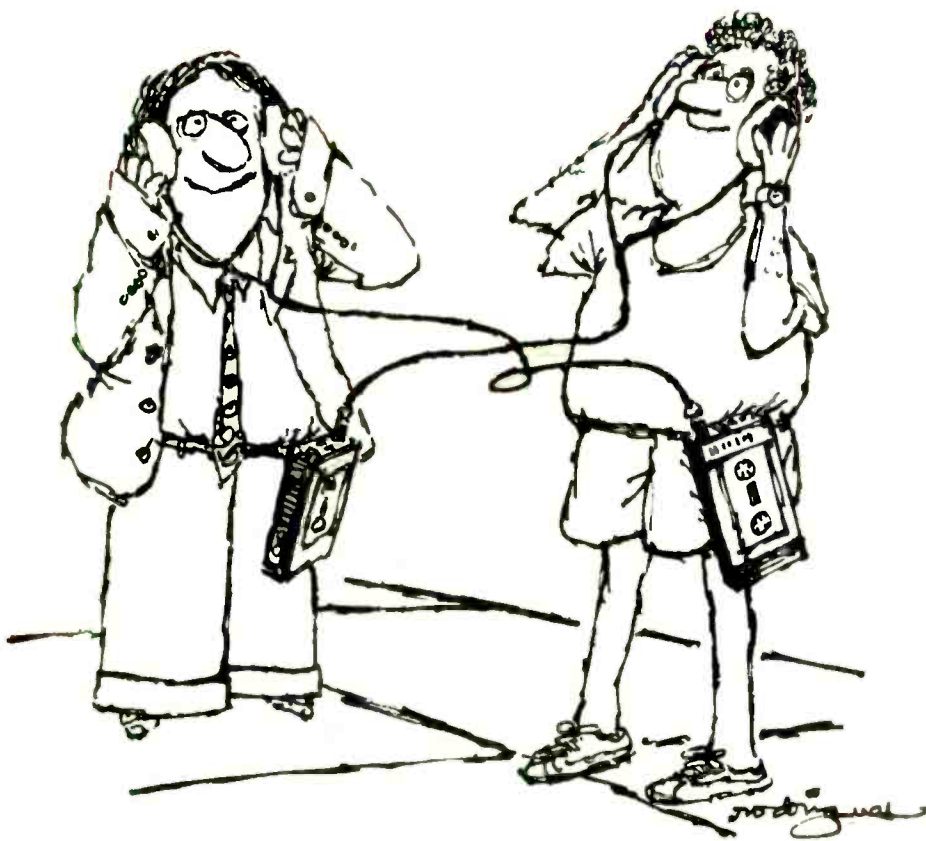
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Choosing a Personal Portable

By Myron Berger



WHEN Sony introduced the first Walkman personal stereo tape player four years ago (it was called the Soundabout then), people were amazed at the quality of the sound delivered by the tiny machine. While the first Walkman could not match the sound from high-quality headphones and a home component system, neither could you take a home cassette deck out for a jog around the park. In the intervening years, nearly every company in the audio business has entered the personal stereo market, and some of the units now available are capable of delivering music into headphones with a quality approaching that of a good home system.

With the vast range of products available, choosing a personal stereo tape player or radio is not easy. But there are a few tips that can simplify the task, especially if you are concerned with maximizing sound quality.

First, narrow your range of choice. If you're like most readers of STEREO REVIEW, you would be unlikely to buy a home or auto tape deck without a noise-reduction system (Dolby, dbx, or DNR), and by requiring noise reduction in any portable tape player you are considering, you can eliminate perhaps 80 per cent of the players on the market. As in shopping for any hi-fi equipment, avoid brand names that are totally unfamiliar or that sound suspiciously similar to famous brand names. For example, if you come across a "Xony Walkaway," simply walk away.

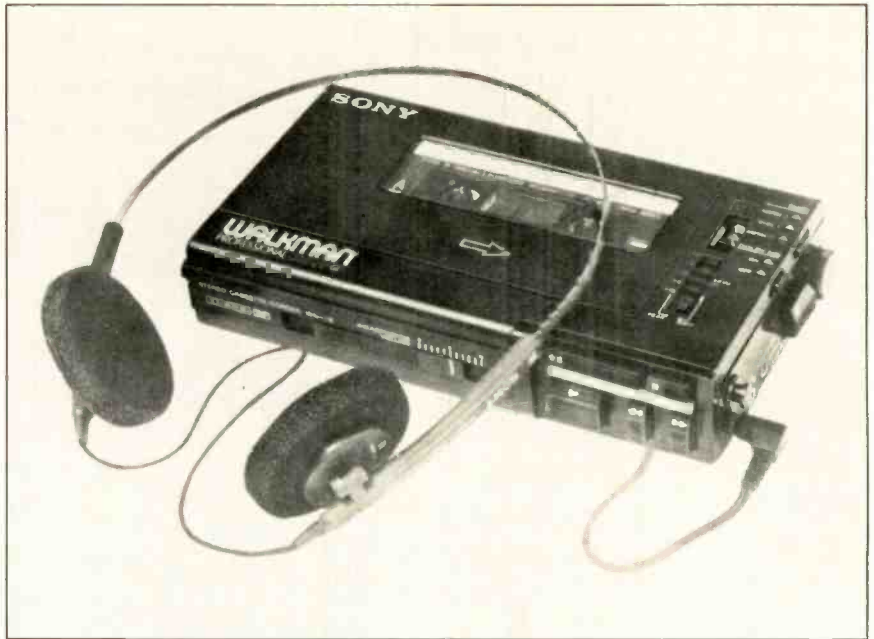
Then, choose a machine that suits the environment in which you will use it. If you want to jog, ski, or roller-skate while carrying a portable stereo, you

should pick a ruggedly built model. Make sure that the transport in a tape player remains stable when the unit is shaken. If you are just going to lie in a hammock in a quiet back yard and listen to tapes of string quartets, ruggedness may be less important to you than overall sound quality. But if you're going to use your radio or tape player where there is a lot of ambient noise—on buses, subways, or airplanes, say—you should also be concerned with the amount of isolation its headphones provide (or its ability to drive better-isolating separate headphones).

If the usually limited published specifications for personal stereos make it hard for you to determine whether a particular machine is the one for you, there are a few revealing tests you can perform yourself in a store (see the box on page 73).

The current crop of pocket stereos includes a generous variety of configurations: cassette players, cassette recorder/players, cassette players with built-in FM tuners or plug-in cassette-shaped radio modules, AM/FM receivers, FM-only receivers, and even stereo microcassette players. Rather than attempt to report on all of the devices available, we'll spotlight only a few of the more unusual hi-fi models.

The Sony Walkman Professional (or the WM-D6) seems to be a home cas-



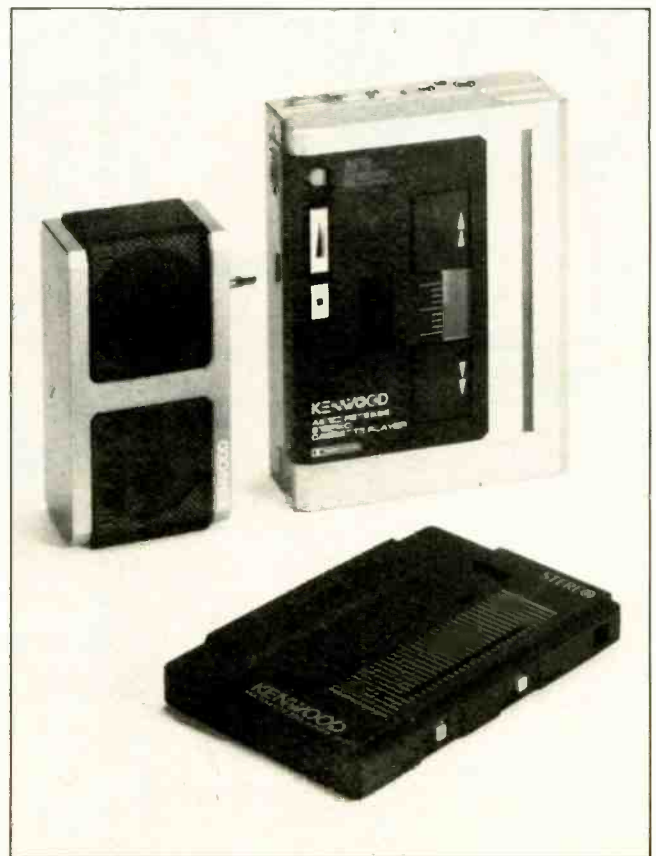
Sony Walkman Professional (WM-D6)

sette deck masquerading as a personal portable. It not only plays *and* records tapes with Dolby-B but also has probably the most impressive array of specs in the field. Frequency response is given as 40 to 15,000 Hz \pm 3 dB, wow-and-flutter as less than 0.04 per cent (wrms), and signal-to-noise ratio as 58 dB (metal tape, Dolby off). For \$350

the WM-D6 also offers several features unique among personal portables: a peak-reading LED level indicator that also shows battery reserve, inputs for external microphones and line-level sources, and an adjustable playback-speed control. Speed stability is maintained by a quartz-locked capstan-servo system.



Panasonic's "dbx Way" (RQ-J20X)



Kenwood CP-80

The Panasonic RQ-J20X is currently the only pocket stereo tape player with a signal-to-noise ratio (S/N) in excess of 80 dB (81 dB, to be precise). No, the \$150 unit is not the world's first pocket digital cassette player; rather, it uses dbx noise reduction to achieve this high S/N figure. With the dbx circuitry switched out, the S/N specification is a more modest 56 dB. The "dbx Way," as the unit is also called, has a rated dynamic range of 97 dB at 1,000 Hz with the dbx switched in. A Panasonic engineer said that its wow-and-flutter had been unofficially measured as 0.035 per cent, but he added candidly that audible wow *can* be induced by shaking the device (an absolutely typical effect with most personal tape players).

Kenwood's CP-80, the company's first entry into the personal stereo field, is an auto-reverse cassette player/radio with the unusual feature of snap-on "micro speakers." The two miniature full-range drivers are housed in a single enclosure, but their outputs are aimed in different directions. Priced at \$189.90, the CP-80 has Dolby-B noise reduction, an AM/FM tuner pack, and headphones with a removable headband (to turn them into earphones). Frequency response is said to be from 40 to 16,000 Hz with metal tape, although for a playback-only unit the

tape type shouldn't matter too much.

Another recent contribution to high-fidelity pocket-stereo design is the JVC CQ-F22K (shown below and on this month's cover). Characterized as a "component headphone stereo system," the \$190 package consists of a cassette player with Dolby-B and auto-reverse, an AM/FM stereo tuner module, a battery power-supply module for the tuner, and a set of multipurpose headphones. The system can be used in a wide variety of configurations. The cassette player and headphones can be used either alone or with the tuner module attached, and the tuner and tuner-battery modules can be used together either as a pocket stereo radio connected to the headphones by wires or clipped directly onto the headphones for truly wireless listening.

Easily the most thoroughly specified FM-only personal stereo, as well as one of the best, is Proton's Model 100 portable FM receiver. Its tuner is a version of the Schotz circuit used in NAD home equipment, and the separate bass and treble controls use the standard home-stereo Baxandall circuit. The specifications compare favorably with those of home components, including a *stereo* 50-dB quieting sensitivity of 34.2 dBf (28 microvolts), total harmonic distortion at 1,000 Hz of 0.15 per cent in stereo, a signal-to-noise ratio of 74 dB

in stereo, a capture ratio of 0.4 dB, alternate-channel selectivity of 60 dB, and stereo separation at 1,000 Hz of 40 dB. The unit comes with a set of headphones. Price is \$79.95.

Also radio-only is the Koss Digital Music Box (\$110). It offers a numerical LCD readout for the station frequency, signal strength, and battery condition. Like home digital-synthesis receivers, the Digital Music Box has station preset buttons (four AM, and four FM) and automatic search and scan tuning modes. It also has a unique feature designed to protect a user's ears from the hearing loss that has been associated with listening to music at high volume levels: a yellow LED, called a "safeLite," glows whenever the sound-pressure level from the supplied headphones exceeds 95 dB. Exposure to sound-pressure levels of 95 dB or greater for more than four hours a day can lead to hearing impairment, according to Koss, and the safeLite is meant to warn users when they have entered the danger zone.

Although the personal portables described above are only a few of the more unusual ones with true high-fidelity performance, their wide variety of features and capabilities is representative of the field as a whole. It's a product category that seems to have something for everyone. And it's still grow-



JVC CQ-F22K



Proton Model 100

ing, as audio manufacturers come up with ways to improve sound quality even further and to make personal stereo even more convenient.

For example, dbx has announced its PPA-1 Silencer, which is a \$49 add-on battery-powered dbx-tape decoder for personal stereos. It connects to a player's headphone jack and includes its own volume control and a headphone output that supplies the more than 90-dB dynamic range possible with dbx-encoded tapes. The small unit's bypass switch also has a setting provocatively labeled TYPE B (that, according to dbx, acceptably decodes "other popular noise-reduction systems" (no prizes for which one they mean). The Silencer may be worthwhile if only for adding "type-B" decoding capability to older, less-expensive tape players.

The recent development of Dolby-B-decoder integrated circuits that can run off only 3 volts (two AA cells) and their incorporation into the latest tape players might also presage the imminent arrival of add-on Dolby-B decoders for personal portables. Remember, however, that the performance of any add-on noise-reduction device may be limited by the frequency response and background noise level of the player it is used with, and personal portables tend to be noisier and have a more re-

stricted frequency response than home tape decks.

The boom in personal portables has been a spur to engineering creativity, spawning products never dreamed of before. For instance, Sony recently introduced the WMF-5, a *water-resistant* (not necessarily *waterproof*) cassette player/radio—immediately dubbed "Swim Man" by the audio press—that has been used successfully for half an hour 3 feet under water (an application the company does not recommend). Other pocket portables have been introduced that are designed to mate with larger, speaker-equipped portable stereo systems in order to give the user a larger choice of listening formats or greater convenience. Sharp, Aiwa, and Toshiba, among others, produce variations on this theme, and Sony now offers a car stereo unit that has a pop-out portable called the Music Shuttle.

Accessories for personal portables are beginning to appear in great numbers and variety. These include such items as booster amplifiers and speakers, solar power packs for all-day listening at the beach, waterproof pouches, battery chargers, various cable adaptors, and, of all things, five-band pocket headphone equalizers.

We can probably also expect better, if not bigger, things in the area of microcassettes. Several companies have

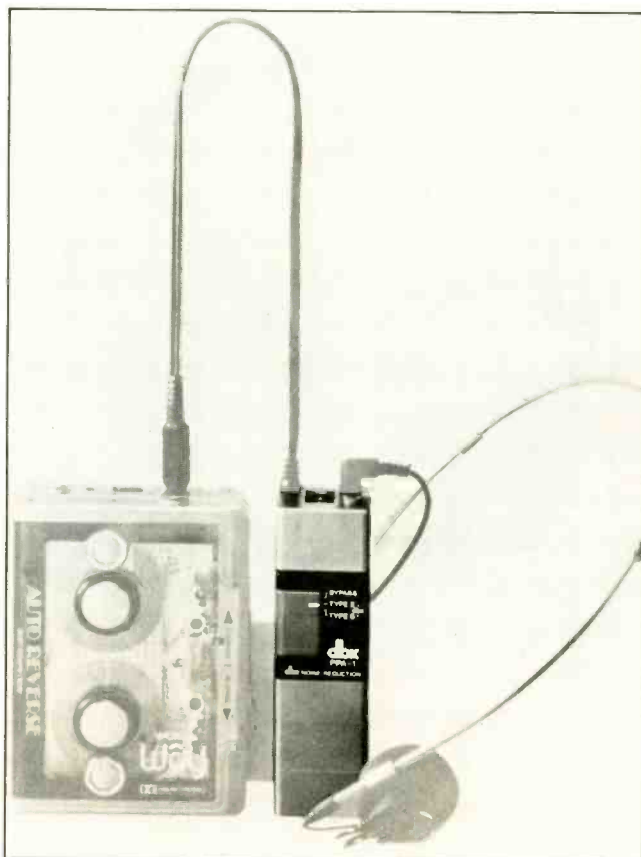
recently introduced stereo microcassette recorders to their pocket stereo lines. But because prerecorded microcassettes are not available in the U.S. (you can get them in Japan) and there is a relatively small number of home decks on which you can record your own, there has been little effort as yet to market a playback unit with high-fidelity performance in the U.S. Nonetheless, an official of National Semiconductor—makers of the popular DNR single-ended (playback only) noise-reduction system—says that DNR-equipped stereo microcassette decks are on their way. These might substantially improve the sound quality obtainable with the diminutive tapes.

Ultimately, the performance of all present-day portable players will probably be eclipsed by digital cassette players or the as yet undemonstrated portable digital Compact Disc players. These machines are at least a couple of years away from commercial reality. In the meantime, a well-chosen personal portable stereo can supply amazingly good sound at surprisingly little cost. In audio at least, it turns out that you can take it with you. □

Myron Berger is a freelance writer who has been covering audio, video, and computers for seven years. His syndicated column "State of the Art" appears in newspapers throughout the country.



Koss Digital Music Box



dbx Silencer (PPA-1)

In-Store Tests for Personal Stereos

WHEN you go shopping for a personal portable, you can, and should, test a number of key performance factors in the store before making your purchase—provided you can find a store with a cooperative staff.

Testing **tape-drive stability** in a tape player is easy: while listening to a cassette you already know has no significant wow-and-flutter (as with all serious hi-fi shopping, you should bring your own test materials), shake the player vigorously in several different directions and listen for any burbles in the sound or wavering of the musical pitch. Ideally, there shouldn't be any, but even good players will probably be affected to some degree by this rough treatment. Look for the player that is affected least. Although any kind of music can be used for this test, wow-and-flutter can be heard most easily in recordings of instruments with discrete fixed pitches such as pianos, organs, harpsichords, and synthesizers. A good solo-piano tape, for instance, will very effectively expose tape-transport deficiencies.

Another simple test will let you judge the inherent **signal-to-noise ratio** of any portable tape player. All that you need is a *blank* tape that has nonmagnetic leader spliced onto the ends, as most cassettes do. The background noise level of the blank tape will serve as the reference noise level to which you will compare the noise levels of various players.

Place the blank tape in the player and operate the fast-forward or rewind control so that there's only about a minute of tape left to play, then press the play button and turn the volume up high. The hiss you will then hear is a combination of the player's noise level and the background noise of the tape itself, with the latter much higher than the former. As the magnetic tape changes to the nonmagnetic leader, pay attention to how much the noise level *drops*. The greater the drop, the lower the inherent playback noise level of the machine.

When comparing players using this test, always use the *same* blank cassette and headphone set and always set the volume at the same subjective level while the tape (not the leader) is playing. Try to concentrate only on the hiss levels; ignore low-frequency crackling or rumbling noises you hear while the leader is playing—unless you also hear them from the magnetic tape. If the player has a switch for playback equalization, be sure to use the appropriate setting (normal or chrome/metal) for the test tape you are using. With the better players you may not hear any differences. And if the player has a **noise-reduction** system, turn it *off* for this test—but don't forget to test its operation also before making your purchase. Simply play an appropriately encoded tape with the noise-reduction system switched on and off, and note whether it sounds significantly quieter with the system on.

Even if you do not normally listen to mu-

sic at very loud levels, the short-duration peaks found on some high-quality tapes can place considerable demands on the **dynamic range** capability of a portable's amplifier. To test this, move the headphone pieces forward off your ears and onto your cheekbones to protect your ears from high volume levels. Then slowly turn up the volume until you hear distortion. This is easier to hear with a relatively simple musical tone, such as a clarinet or flute recording or, better yet, a steady test tone. The sound level should be very loud, even with the headphones on your cheeks, before you hear any distortion at all. Note: this test is not valid if the unit has weak batteries, because they will cause the amplifier to distort at lower listening levels. Bring along your own *new* batteries.

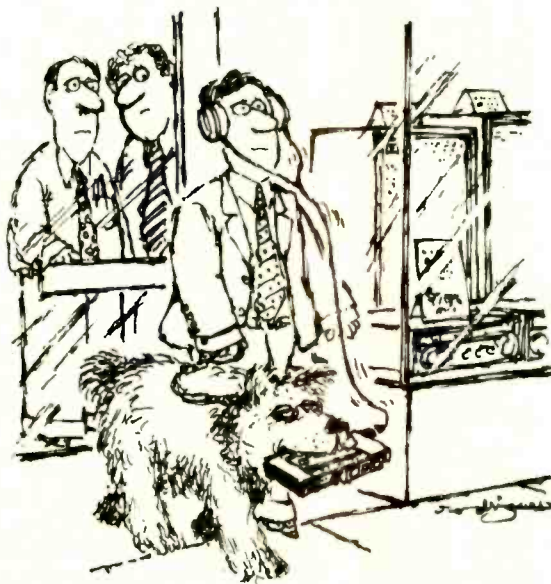
Testing a personal portable for **frequency response** is somewhat trickier, since the overall response of the unit may be limited by the supplied headphones. The best way to check frequency response in the store is to use the portable unit to drive a set of high-quality dynamic headphones designed for home use (you'll probably need a plug adaptor for the hookup). Use tape or broadcast program material with a wide dynamic and frequency range, and listen in particular for the unit's response at the frequency extremes, since personal portables often have problems reproducing very high and very low frequencies. Use a well-made home dub of a wide-range disc as the program source for auditioning tape players.

Test the player's **headphones** by plugging them (again using an adaptor if necessary) into a convenient home-type receiver. Sometimes the headphones supplied with a portable unit have such poor sound quality that you might want to substitute others.

Portable stereo FM receivers, whether stand-alone units or cassette-shaped modules inserted into the cassette compartment of a portable tape player, usually use the headphone cord as an antenna. To examine the unit's **reception** under changing signal conditions—as would occur, for example, if you wear it while jogging—move around while auditioning the radio. Orient the headphone cord in different directions to see if reception quality suffers. Check how many stations can be received cleanly, especially stations with more distant or weaker transmitters. Does the radio switch automatically into mono when stereo reception is too noisy, or must it be switched manually? Does the background noise level decrease when you switch the unit into mono? It should if the FM circuits have a low inherent background-noise level.

One of the more important aspects of portable component design is **power consumption**. Unfortunately, the rate at which a unit uses batteries is not easy to test in a store. The best you may be able to do is to find a specification in the component's instruction manual for battery life (the longer the better) or power consumption (the lower the better). If you use a personal portable a great deal, rechargeable nickel-cadmium batteries may pay for themselves after only a few weeks of use.

Another matter you should check while shopping is the number, type, and cost of the accessories available for each unit, such things as a.c. power supplies, replacement ear cushions for the headphones, FM-tuner modules, and carrying cases and straps. If you plan to wear the unit, make certain that it is not too heavy or bulky and that the carrying straps are long enough and adjustable for a snug but comfortable fit.



THE NEW SOFTWARE

Compact Discs

By Christie Barter

WITH the advent of the Compact Disc and the technology behind it we enter a new era in musical reproduction—in the home, on the air, on foot (one day, undoubtedly), and in the car. I suppose eventually twelve-inch vinyl LP's will gather dust in attics and in the bins of secondhand shops much as old 78's do today. Eventually we may even take for granted the quality of sound the CD makes possible.

For the present, however, I am reveling in the quality of that sound, which is truly wonderful even on fairly modest equipment. I have been listening to some Compact Discs chosen from the first American releases of CD software and can confirm that the two most distinguishing characteristics of CD playback are its extended dynamic range and the total absence of background noise of any kind.

Added enhancements include better stereo separation and imaging, considerably richer bass and generally truer highs, and freedom from such things as outer-groove pre-echo and inner-groove distortion. The CD also frees the listener from wow, flutter, and the anxiety induced by thunderous climaxes in big orchestral works where LP's are most susceptible to distortion.

The surging climaxes and booming artillery of Tchaikovsky's *1812* Overture make it a classic audio demonstration piece. It puts stereo equipment through its paces not just because it is so *loud*, but because it's also very *soft*, at least at the outset. Of the two versions I listened to, the one by Lorin Maazel and the Vienna Philharmonic is decidedly the better engineered and more idiomatic performance. It has a kind of ethnic, Russian solemnity and heft lacking in the recording by Daniel Barenboim and the Chicago Symphony, which sometimes borders on corniness. Maazel also uses the choral version, which is especially effective in digital playback as the hushed voices of the singers emerge, at the beginning of the work, from total silence.

Both recordings, however, reveal how the microphone techniques developed for more "realistic" sound on LP's will have to be re-evaluated for CD recording. Close microphone placement and the use of multiple

microphones to point up various instruments or groups of instruments may have a place in analog recording; a certain amount of sonic detail gets lost or is veiled over by the time the music passes through the several electromechanical processes involved. With CD's the veil is lifted. Music that is recorded and played back digitally comes across with such clarity that what you hear or do not hear is almost entirely the conductor's decision (at least it *should* be the conductor's and not the engineer's). A microphone placed over a string section to give it more presence in an analog recording may result in undue brightness or shrillness on a CD. And such is the case with both of these *1812*'s—less so with the Maazel recording, but even it could use a little more sonic space.

There are other things to think about as the dawn of the CD era breaks over us, things to look for and things to look forward to. They include:

Uninterrupted performance. Like tape, the CD format allows for the uninterrupted performance of works that occupy more than one side of an LP record, although most cassettes simply duplicate the corresponding LP format in this respect, side breaks and all. Perhaps if Bartók had written his Concerto for Orchestra knowing it would wind up on LP, he would have brought it in at something under thirty minutes, but he did not. So on records the work is interrupted after the *Intermezzo interrotto* in order to carry the finale over to the second side. Not so on CD. And when the performance in question is as brilliant and as pointed as Sir Georg Solti's new one, now transferred to a London CD, the enormous potential of the medium can be readily appreciated. Whatever the miking setup may have been for Barenboim's *1812*, the Chicago Symphony under Solti sounds almost like a different orchestra. The sound is absolutely stunning.

Another work that benefits from the CD's capability for uninterrupted playback is Stravinsky's complete music for *The Firebird*, which receives a glowing performance by the Concertgebouw Orchestra under Sir Colin Davis on a Philips CD. The remarkable thing here is that it derives from an analog master (nowhere indicated in the packaging) and still sounds so good.

Extended play. The CD is capable of at least sixty minutes of playing time (even up to eighty minutes, according to some reports), so there is no reason that an opera that normally occupies three LP's cannot be fitted onto two CD's, with appropriate breaks. Record companies have been notoriously slow to pick up on this convenience in their tape releases (a recent exception being London's recording of *I Masnadieri*, available on three LP's or on two cassettes), and we won't have a complete opera on CD for a little while yet, in the U.S. anyway, but let's hope for the best.

Of the CD's I auditioned, the winner in the length-of-play stakes is the L'Oiseau-Lyre album of highlights from Handel's *Messiah* conducted by Christopher Hogwood. It clocks in at fifty-seven minutes and thirty-two seconds (and a really fine recording it is too). A close runner-up is Joan Sutherland and Luciano Pavarotti's London CD of excerpts from Verdi's *La Traviata*, which runs only a few seconds shorter. The booby prize for duration goes to a Deutsche Grammophon Archiv CD, Trevor Pinnock's (deservedly) best-selling version of Vivaldi's *The Four Seasons*. The distinction of being shortest is just barely missed by Herbert von Karajan's recording of Saint-Saëns's Third Symphony on DG. (Karajan's is not one of my favorite recordings of this work anyway, and I'd advise you to wait for Charles Dutoit's on London.) Neither of these CD's offers more than thirty-eight minutes of playing time. Which means you're not getting much music for your money, distinguished though that music may be. Which brings us to . . .

Programming. The CD offers record manufacturers the opportunity of recoupling works in their catalogs that obviously belong together and have not yet died untimely deaths from poor sales. Such is the pairing of Rodrigo's suite of colorful miniatures titled *Concierto Madrigal* for two guitars and orchestra with his better-known *Concierto Andaluz* for four guitars, both played by Los Romeros and the Academy of St. Martin-in-the-Fields under Neville Marriner. Both works were divorced from other LP partners on Philips to make for a delightful CD release; both are digitally remastered analog recordings as well.

There probably won't be too many instances of this kind of creative recoupling. Record manufacturers have not rushed to take advantage of the reprogramming opportunities offered by the cassette, even to fill out unused playing time, and there are often contractual reasons that make it difficult. But the cassette is cheap compared with the CD. We have all gotten used to the occasional *short*-playing record or tape, but the clamor for value-per-dollar on the part of CD buyers is bound to be greater.

Price. CD's are expensive. The price of the players will undoubtedly come down in a year or two, but my hunch is that the Compact Disc itself will remain a pretty costly item. Most labels are leaving the actual selling price for the individual dealer to decide, but the suggested U.S. retail price ranges from \$17 to \$20 (English dealers are selling them for just under £10, approximately \$15 to \$16, including taxes). The prices to dealers in this country are predominantly in the \$12 to \$13 range.

Banding. A major advantage the CD holds over tape is instant access. On most players you can move from the first movement to the second or third movement of a work *instantly*, at the push of a button. The

same is true of forward or backward moves, from one track to another, on a pop record. CD recordings can be said to be "banded," just as LP's are banded, except that the banding on a CD cannot actually be seen by the eye. It is part of the digital information encoded on the disc.

Some classical CD's are banded by the work, such as the splendid set of six Scarlatti sinfonias performed by I Musici (Philips), Marriner's elegant performances of Bach's *Brandenburg* Concertos (also on Philips), and the two CD's that offer the Tchaikovsky *1812* Overture along with other works. More useful still is banding by movement, which is the case with the Bach violin concertos on L'Oiseau-Lyre conducted by Hogwood with soloists Jaap Schröder and Christopher Hirons, Pinnock's *Four Seasons*, the distinguished performances by Alfred Brendel of Mozart's Piano Concertos Nos. 15 and 21, and the Rodrigo disc.

The lack of banding on the Philips CD of Stravinsky's *Firebird* is inconvenient. Although the work is played without pauses, it *does* have distinct sections that could easily have been banded. The favorite demonstration passages, for instance, occur some thirty minutes into the score, and while CD's can be fast-forwarded in short order, three or four handy banded divisions could have been encoded onto the disc without any kind of audible interruption.

Indexing. Another CD that would benefit from banding is the landmark second recording of Bach's *Goldberg* Variations by the late Glenn Gould for CBS. The LP version should have been banded too, if not for every single variation at least for every group of three or four. Great was my surprise to discover that on CD Gould's performance was indeed segmented, but in a way that can be used only with those players that have an indexing feature. The record is not banded, but you can move from the first statement of the aria to any one of the thirty variations or even to the final restatement of the aria at the push of two or three buttons—instantly, or after a few seconds of scanning. For the moment, indexing seems to be a feature only of CD's manufactured by CBS/Sony in Japan. That label's charming collection of Haydn flute trios by Jean-Pierre Rampal and distinguished colleagues is banded, so that access to the beginning of any one of the six trios can be achieved in a flash, and it is indexed by movement within each trio.

A CBS album that couples Beethoven's Fifth Symphony with Schubert's Eighth, conducted by Maazel, offers even further indexing wonders: it is banded by movement and also indexed according to a musical analysis of each movement. Thus, after the statement of the "Main Theme" in the first movement, you can move to the "Sub Theme" at index two, the "Development" at index three, the "Recapituration" (made in Japan, remember) at index four,



Conductor Neville Marriner

and the "Coda" at index five. Think what this will do for music-appreciation courses! Or for anyone interested in how music is structured.

The future. There is no question about it in my mind: sooner or later the future will belong to the digital audio disc, the CD. But the LP will be with us for a good while yet. Treasured collections will remain treasurable, and much that exists on LP today will probably never be available in any other format. In time, however, just as many 78's were cleaned up and transferred to LP, many of the best recordings of the past will find their way into the CD catalog.

Evidence of just how impressive analog recordings can sound on CD is amply shown by five of those I listened to—the *Messiah* conducted by Hogwood, the Rodrigo album, the *Firebird*, the album of operatic duets by Sutherland and Pavarotti (CD does magical things for the voice), and Marriner's *Brandenburgs*. London Records is good about telling the buyer whether a recording was remastered from an analog original, but Philips is not. In fact, in the case of the *Brandenburgs*, the words "digital recording" appear on the disc itself, although it most assuredly is not.

The analog masters of all of these recordings were, however, obviously of first-rate quality, offering far more than ever came

through on LP or tape, especially in dynamic range. Who's to say that we're not in for many surprises as more and more analog recordings of the past are transferred to the new medium at full throttle?

Most of these CD's can be enthusiastically recommended, with those few exceptions and caveats already noted. Most, too, represent the state of the art in performance as much as in technical quality. In brief, they're mostly sensational.

BACH: *Brandenburg Concertos.* Academy of St. Martin-in-the-Fields, Neville Marriner cond. PHILIPS 400 076-2 and 400 077-2, two discs.

BACH: *Violin Concertos Nos. 1 and 2; Concerto for Two Violins.* Jaap Schröder, Christopher Hirons (violins); Academy of Ancient Music, Christopher Hogwood cond. L'OISEAU-LYRE 400 080-2.

BACH: *Goldberg Variations.* Glenn Gould (piano). CBS MK 37779.

BARTÓK: *Concerto for Orchestra.* Chicago Symphony Orchestra, Sir Georg Solti cond. LONDON 400 052-2.

BEETHOVEN: *Symphony No. 5, in C Minor.* **SCHUBERT: *Symphony No. 8, in B Minor ("Unfinished").*** Vienna Philharmonic Orchestra, Lorin Maazel cond. CBS/SONY CD 36711.

THE NEW SOFTWARE

HANDEL: *Messiah*. Judith Nelson, Emma Kirkby (sopranos); Carolyn Watkinson (contralto); Paul Elliott (tenor); David Thomas (bass); Choir of Christ Church Cathedral, Oxford; Academy of Ancient Music, Christopher Hogwood cond. L'OISEAULYRE 400 086-2.

HAYDN: "London" Trios, Nos. 1-4; *Diver-timentos Nos. 2 and 6, Op. 100.* Jean-Pierre Rampal (flute); Isaac Stern (violin); Mstislav Rostropovich (cello). CBS MK 37786.

MOZART: *Piano Concerto No. 15, in B-flat Major (K. 450); Piano Concerto No. 21, in C Major (K. 467).* Alfred Brendel (piano); Academy of St. Martin-in-the-Fields, Neville Marriner cond. PHILIPS 400 018-2.

RODRIGO: *Concierto Madrigal; Concierto Andaluz.* Los Romeros (guitars); Academy of St. Martin-in-the-Fields, Neville Marriner cond. PHILIPS 400 024-2.

SAINT-SAËNS: *Symphony No. 3, in C Minor ("Organ").* Pierre Cochereau (organ); Berlin Philharmonic Orchestra, Herbert von Karajan cond. DEUTSCHE GRAMMOPHON 400 063-2.

SCARLATTI: *Six Sinfonias.* I Musici. PHILIPS 400 017-2.

STRAVINSKY: *The Firebird.* Concertgebouw Orchestra, Amsterdam, Sir Colin Davis cond. PHILIPS 400 074-2.

TCHAIKOVSKY: *1812 Overture; Marche Slav.* BEETHOVEN: *Wellington's Victory.* Vienna State Opera Chorus; Vienna Philharmonic Orchestra, Lorin Maazel cond. CBS/SONY CD 37252.

TCHAIKOVSKY: *1812 Overture; Marche Slav; Capriccio Italien.* Chicago Symphony Orchestra, Daniel Barenboim cond. DEUTSCHE GRAMMOPHON 400 035-2.

VERDI: *La Traviata (excerpts).* Dame Joan Sutherland (soprano); Luciano Pavarotti (tenor); National Philharmonic Orchestra, Richard Bonynghe cond. LONDON 400 057-2.

VIVALDI: *The Four Seasons.* The English Concert, Trevor Pinnock cond. ARCHIV 400 045-2.

OPERATIC DUETS. Dame Joan Sutherland (soprano); Luciano Pavarotti (tenor); National Philharmonic Orchestra, Richard Bonynghe cond. LONDON 400 058-2.

Digital Cassettes

By Chris Albertson

IN *The Tunnel*, a film made in the mid-Thirties but set in the Sixties, C. Aubrey Smith played a multimillionaire who helps finance the construction of a transatlantic tunnel. To launch this improbable undertaking, he invites a group of potential backers to his mansion for a briefing by the project's enthusiastic architect. "Basically," the young man tells them, facing a map of the Western Hemisphere, "we want to build a tunnel from *here* to *here*." With

that, he resolutely draws a line connecting New York to the west coast of England, sending a gasp of astonishment through his formally dressed audience. "It won't be easy," continues the engineer, this time producing a wave of laughter from the 1969 audience with whom I viewed the film in a New York movie house.

As films go, *The Tunnel* is hardly a classic. Its most interesting feature may very well be its mid-Thirties creators' perception of the distant Sixties: a streamlined society where picture phones are the norm, cars feature huge stabilizing shark fins across their roofs, and people think nothing of crossing the Atlantic by gyroplane. Not anticipated were hippies, flower children, hot pants, cold wars, and rock music. Also not anticipated was the tremendous growth of home entertainment. High-fidelity stereo sound was only for the very wealthy. "Stereo sound"? Well, not as we have come to know it. But to celebrate the tunnel project C. Aubrey Smith was able to treat his guests to the *ultimate* in home sound: a gentle tug on a tasseled silk cord and velvet curtains at one end of the mansion's large living room parted to reveal a live symphony orchestra! It was all made to appear quite routine, but I doubt if anyone viewing *The Tunnel* in the Thirties walked away thinking that he had caught a true glimpse of the Sixties.

Sound reproduction has come a long way in the past fifty years, but most people have yet to experience just how far it *has* come. Granted, an electronically reproduced Mahler symphony will probably never sound quite the same as having a symphony orchestra play it in your living room, but recent technological developments are rapidly narrowing the gap. Chances are that most of us will first experience true digital sound reproduction in our own homes via Compact Discs or the very few digital tape cassettes that have just begun to appear. The latter, of course, also require special playback equipment, such as the Technics SV-P 100 digital cassette deck, which costs \$3,000 but can also be used to make your own tapes with what Craig Stark described in the March 1982 issue of *STEREO REVIEW* as "the cleanest sound I have ever recorded."

There are at least eight albums currently available in the VHS digital audio cassette format. All are from Mobile Fidelity Sound Lab, a company known for reissuing albums licensed from various labels in state-of-the-art pressings. Mobile Fidelity's limited-edition Original Master Recordings series proved how good analog discs could sound when optimum care was exercised during the mastering and pressing process. The company's digital cassettes are also leased from various labels, and—oddly enough—only one of the eight was actually recorded digitally.

The repertoire is small but varied, with

Donald Fagen



James Hamilton/Warner Bros.

the eight cassettes ranging from Respighi to Supertramp. The material has, of course, been selected on the basis of its suitability to the extended dynamic range of the digital medium, so it is not surprising to find Pink Floyd's "Dark Side of the Moon," Gustav Holst's *The Planets*, and the Alan Parsons Project's "I Robot" among the offerings, but I do wonder why the relatively dull serving of "Finger Paintings" by Earl Klugh made the grade. The latest release, Chuck Mangione's plodding "Feels So Good," is an equally puzzling addition when one considers the wealth of good music available.

Be that as it may, my purpose here is not to review the music (that has, in most cases, been done in previous issues), but to comment on the *sound* of the digital cassettes. Yes, it is wonderful not to hear the swoosh and clicks of bad pressings, but you don't have to go digital to eliminate such extraneous sounds. What is really impressive here is the total lack of wow-and-flutter and the marvelous quiet that accompanies the softest passages. Donald Fagen's "The Nightfly" gets my highest rating as far as sound quality is concerned, but that is undoubtedly because it is the only one that was digitally recorded in the first place.

There was some trouble with the first cassette I received of *The Planets*; ironically, it manifested itself near the beginning of "Mars, the Bringer of War" as a rather sharp and lengthy crackling noise that I suspect tested my speakers to their limit. Mobile Fidelity promptly furnished me with another copy, and it sent Holst to my ears without so much as a tick.

The real test comes when you toggle back and forth between these digital cassettes and their analog disc equivalents. There is no question about it, the cassettes are marvelously clear and distortion-free. But there is a trade-off; their sound lacks warmth. It is hard to pinpoint, but it is as if the digital recording process had sheared off the room ambience. I am sure that recording engineers will find a way to humanize these cool sounds, and, all things considered, I do prefer what the cassettes have to offer.

Finally, I have not been able to find another source of prerecorded digital cassettes, and you might wonder why Mobile Fidelity's catalog is so incredibly skimpy. One obvious reason is the price: at \$1,500 to \$3,000 for the playback equipment and \$60 per cassette, the market has to be quite limited. But piracy, too, is a consideration. A digital cassette is a pirate's dream, for it is tantamount to having in one's possession the original master tape. That also holds true for the new Compact Discs, and I am told the problem is already very real in Europe, where CD's have been on the market for some time. Is there a future for digital cassettes in the home? Perhaps, but it would have to be in a more economically feasible format. Right now, I hold more hope for that transatlantic tunnel.

The following digital cassettes are available from Mobile Fidelity Sound Lab for \$60 each:

DONALD FAGEN: *The Nightfly.* VHS 120.

EARL KLUGH: *Finger Paintings.* VHS 025.

CHUCK MANGIONE: *Feels So Good.* VHS 068.

ALAN PARSONS PROJECT: *I Robot.* VHS 084.

PINK FLOYD: *Dark Side of the Moon.* VHS 017.

SUPERTRAMP: *Crime of the Century.* VHS 005.

HOLST: *The Planets.* London Philharmonic Orchestra, Sir Georg Solti cond. VHS 510.

RESPIGHI: *Feste Romane; The Pines of Rome.* Cleveland Orchestra, Lorin Maazel cond. VHS 507.

Pioneer LaserDiscs

By William Livingstone

THE magic spell of home video seemed to be everywhere but my house when I began a recent project to survey the classical music on Pioneer LaserDiscs. I started with an almost random sampling of the available instrumental and vocal selections, and although I've been quite impressed by demonstrations of the Pioneer player, I approached the discs themselves somewhat warily, with a couple of prejudices and a number of questions.

I have strong views on the way classical music is presented on television, and I am prejudiced in favor of the methods used on the Public Broadcasting Service in the two series *Live from the Met* and *Live from Lincoln Center*. The techniques PBS producers use in telecasting live performances often capture a great deal of the electricity that passes back and forth between the musicians and the audience in the theater. When to this is added the intimacy afforded by close-ups, the result is sometimes a TV show that is more exciting than the live event in the concert hall.

This sense of a special occasion on which an important artist performs for an adoring

audience is quite palpable in "Vladimir Horowitz in London" (PA-82-031). Horowitz returned to London for the first time in more than thirty years for a gala recital in 1982 under the patronage of the Prince of Wales. It was telecast in Europe and the United States, and with slightly varying contents it is available in several audio and video formats. The RCA LP was favorably reviewed here last month by Eric Salzman.

On this video disc Horowitz plays a couple of pieces of Chopin, six Scarlatti sonatas, Schumann's *Scenes from Childhood*, and Rachmaninoff's Second Sonata. Those who follow closely the work of this pianist, now nearly eighty, agree that the London recital was among the best of his recent performances and well worth documenting.

The embarrassing intermission interview presents Horowitz as a garrulous old bore, but the LaserDisc format makes it possible to skip any section with a flick of the remote control switch. The piano sound is metallic and sometimes harsh, which I think is the tone Horowitz produces these days, not a fault of the recording. The visual presentation is handled exactly the way I like it, which is not surprising since the director was Kirk Browning, who directs most of the *Live from Lincoln Center* series.

No director is credited for "Pavarotti in London" (PA-83-043), but it has the familiar look (and sound) of the Pavarotti galas we have seen here on PBS. He sings the same sure-fire arias from *Tosca*, *Luisa Miller*, *Macbeth*, *L'Elisir d'Amore*, and so forth, accompanied in London by the Royal Philharmonic Orchestra conducted by Kurt Herbert Adler. Pavarotti's British fans are just as demonstrative as the American ones. I generally find his platform manner ingratiating, but when he floats on waves of love surging up from the audience, as he does here, he is all but irresistible.

Smetana's *Má Vlast (My Fatherland)*, played by the Czech Philharmonic conducted by Vaclav Neumann (MC-034), was recorded at a concert at the Spring Music Festival in Prague in 1981, but the presentation is quite different from the Horowitz and Pavarotti concerts. Here, shots of the musicians alternate on the screen with footage of the landscape or art and architecture associated with the events the music depicts. I would have preferred less frequent shifts from scenery to musicians, but the photography is beautiful, the performance is rousing, and the sound is pleasing.

In February the Angel recording of Beethoven's Violin Concerto by Itzhak Perlman and the Philharmonia Orchestra conducted by Carlo Maria Giulini was among those cited for honorable mention in STEREO REVIEW's Record of the Year Awards. According to a producer at Angel, the LP was not the soundtrack of the newly released video disc (PA-83-042), but the two must have been recorded at about the same time, and the interpretation is essentially the same.

THE NEW SOFTWARE

Not a taping of a concert performance, this is a studio recording. The camera work, however, is quite similar to that of televised concerts, with many close-ups of orchestra members, soloist, and conductor. If some of the tension evident in live performances is absent here, there is no lack of conviction in the playing or in the demeanor of Perlman and Giulini. The greater control afforded by studio recording results in better lighting and sound, and, of course, no applause.

I also played three of the complete operas currently available on LaserDisc—Britten's *Peter Grimes* (PA-82-008), Saint-Saëns's *Samson et Dalila* (PA-82-014) and Verdi's *Aïda* (PA-82-017). The first two are works closely associated with the Canadian tenor Jon Vickers, who sings the leading male roles in these performances conducted by Colin Davis at Covent Garden in London.

Britten's operas have appealed to me very little, but the power of the video medium to draw you into the performance is so strong and Vickers's characterization of Grimes is so compelling that I found myself watching and listening with interest. By the end I was actually moved by Grimes's fate.

More interesting to me musically and dramatically is *Samson et Dalila*, which I think is generally underrated. The opulent Covent Garden production is colorful, and although the cast may lack authority in

French style, they sing and act quite convincingly. Samson is a particularly congenial role for Vickers, and Shirley Verrett is a splendid Dalila. The opera's big moments come off well, especially the last-act Bacchanale, which is danced with a great deal of pagan fervor. The climax is the seduction scene in Act II. In good form vocally, Verrett manages to convey a great deal of sultry allure while singing the most famous aria, "*Mon coeur s'ouvre à ta voix.*" All told, it's a wonderful performance.

The performance of *Aïda* from the arena in Verona is thrilling. I felt transported—not so much to Egypt, where the story is set, but to Italy, where the performance was taking place. Obviously, you cannot expect a lot of subtlety from artists who have to project to an audience in an outdoor arena, but although the performance may be short on nuance, it is long on authenticity.

Anton Guadagno conducts in a straightforward manner without annoying eccentricities of interpretation. The Italian singers contribute to the sense of idiomatic rightness with voices of the proper weight and color for their roles, and all of them project the text clearly. The surprise is soprano Maria Chiara, who, as Aïda, sings more beautifully than I have ever heard her before either live or on records.

The production, which features an enor-

mous set, is quite spectacular. There are no elephants or camels, but lots of priests, priestesses, slaves, warriors, prisoners, and ballet dancers in the sumptuous Triumphal Scene. And *you* are there. Or at least I felt that I was.

Capturing an outdoor performance at night strained the cameras to their limits, and the balances between voices and orchestra are often less than perfect. But to have succeeded as well as the technical staff did for this video disc is a triumph of engineering. The director was Brian Large, a BBC specialist in opera on TV, and the sound supervisor was Jay Saks, who is also executive producer of RCA Red Seal.

All of these video discs are in the Extended Play mode, which offers chapter search and pause, but not freeze frame, slow motion, or frame-by-frame scanning. The Beethoven concerto and the Pavarotti recital are single records with suggested list prices of \$24.95 each; the Horowitz recital and *Má Vlast*, also single discs, list for \$29.95. Each of the operas takes two discs and lists for \$59.95.

When I started listening to (and looking at) these recordings in the office sound room and in the living room of my colleague Chris Albertson, one of the questions in my mind was whether the sound would be good enough for those accustomed to listening to classical music on records and FM broadcasts. The answer is yes.

The novelty of video with stereo sound may have led me to overrate the sonic quality somewhat at first. It is not up to the standard set by the Compact Disc, of course, but it is better than I have ever been able to get with FM stereo simulcast for PBS TV shows. To my ear the studio recording of the Beethoven violin concerto sounded best, and the sonics of the live performances varied from disc to disc depending on the locale and circumstances of the original recording.

There are none of the surface noises associated with LP's, but some hiss (I presume from video tape) is audible in quiet passages, particularly noticeable in *Peter Grimes* and the Horowitz concert. CX noise reduction quieted this significantly.

Would someone accustomed to moving around the house while listening to records sit down and watch a concert? Yes, and having something interesting to look at makes you concentrate more on the music.

Do I want this system at home? Yes.

I've had more than my share of gala performances by Horowitz and Pavarotti, so I wouldn't have to have those. But I'd like to own the Beethoven concerto, and the *Samson et Dalila* and *Aïda* are really magical.

Now, I'm going to have to check to see what is on video disc for the RCA system. I hear rumors that RCA is negotiating with the Met and the Paris Opera for some very interesting stuff. And speaking of magic, there's talk of a *Tosca* with Maria Callas.

Shirley Verrett
as Dalila



Clive Barde / Covent Garden Video Productions

Audiophile Records

By Paulette Weiss

DESPIKE the impressiveness of the digital Compact Disc, there are many popular-music enthusiasts who are not yet ready to invest \$800 to \$1,000 in a digital playback machine, especially when the discs themselves arrive in such a slender trickle. For those concerned with excellent sound reproduction for a standard stereo system, however, there are the so-called "audiophile" recordings. Most of them cost about twice the average list price of regular LP's, but the greater care that goes into the processes of recording and manufacturing these records makes many of them worth the price to discriminating buyers.

THE direct-to-disc recording process eliminates the tape step from recording and with it the distortions that tape is prone to. There is no opportunity to overdub or otherwise doctor the sound, and the result is a truly "live" and natural-sounding recording. Since the process also eliminates the possibility of editing a recording to conceal errors, however, very few musicians are willing to make direct-to-disc records. Of the comparatively few releases, none are by the superstars of pop, rock, or jazz.

The three principal sources of direct-to-disc recordings—Nautilus, Sheffield Lab, and RealTime—strictly limit the number of discs pressed by each stamper and use only high-quality vinyl. This controls the degradation of quality from disc to disc and lengthens each disc's playing life. As a result each title is a true collector's item. I recommend the following three:

THE SHEFFIELD TRACK RECORD. SHEFFIELD LAB Lab 20 \$16.95. This is the way instrumental rock *should* sound. In comparison it will make muddy water of much of what you've been listening to. It was produced as an audio demonstration disc with a mere four cuts totaling sixteen minutes. The clarity is extraordinary, making every note from every instrument distinct. It's short, sweet, and worth its price.

LINCOLN MAYORGA/AMANDA MCBROOM: *Growing Up in Hollywood Town.* SHEFFIELD LAB Lab 13 \$16.95. Another exquisite recording, this one with full orchestra backing up the clear sweet soprano of

Amanda McBroom, who wrote *The Rose* for Bette Midler and sings it herself here along with eight other selections. The sound on this easy-listening pop record is stunning, open and clear throughout. It's a real treasure.

BILL BERRY AND HIS ELLINGTON ALL-STARS: *For Duke.* REALTIME RT 101 \$17. A sonic spectacular, this is a very entertaining instrumental jazz set of eight well-known Ellington pieces played by such performers as Scott Hamilton and Ray Brown. The sound has an admirable "live" quality, with a terrific sense of space.

LESS consistent in producing greatly improved sound quality is the *half-speed remastering* process employed by Mobile Fidelity Sound Lab and Nautilus (among others). This technique cleans up an existing recording by returning to its original two-track master tape and from it recutting a lacquer master at half the normal speed. The result is less distortion and extended dynamics.

Limited pressing runs and superior vinyl and packaging are characteristic of Mobile Fidelity's Original Master and Nautilus's Superdisc series of half-speed remastered discs. Their catalogs include some of the best albums by the most prominent performers of jazz, pop, and rock. The following are some of the ones I like best.

LED ZEPPELIN: *Led Zeppelin II.* MOBILE FIDELITY MFSL 1-065 \$17. This is a superb example of the improvement possible with half-speed remastering. A good deal of the aural gimmickery was lost in the original pressing, and this audiophile package is a revelation.

THE PRETENDERS. NAUTILUS NR38 \$14.95. Just when you think you know a recording intimately, Nautilus comes along and adds an unheard-of dimension. Listen for the sparkling guitar of the late James Honeyman Scott, the emotion in Chrissie Hynde's distinctive voice, the rhythm section that acts as a foundation of such memorable cuts as *Kid* and *Brass in Pocket*.

MOODY BLUES: *Days of Future Passed* (with the London Symphony Orchestra). MOBILE FIDELITY MFSL 1-042 \$17.

MOODY BLUES: *On the Threshold of a Dream.* NAUTILUS NR 21 \$14.95.

In the Sixties, the Moody Blues' recordings were known for their psychedelic sound effects and their use of orchestral accompaniment. The Nautilus and Mobile Fidelity half-speed versions of these two albums show clearly what was buried in London's original murky packages. Individual instruments emerge from the mush of the original production. Surfaces are pristine, and both discs benefit enormously from the extended dynamic range.

THE BEATLES: *The Collection.* MOBILE FIDELITY BC-1 \$325. To spend \$325 for any artist's recordings, you have to be more than just a fan, you have to be a really avid



Chrissie Hynde of the Pretenders

collector. Well, in the case of Mobile Fidelity's fourteen-disc special edition of the Beatles, I think it's worth it. A magnificent audio package with spanking clean pressings, it offers revelation upon revelation of the influential quartet's vocal and instrumental powers.

The following are other titles in the half-speed format with unusual musical interest and audio quality that is at least good to excellent (the Steely Dan and Gerry Rafferty discs are particularly fine):

ROD STEWART: *Blondes Have More Fun.* MOBILE FIDELITY MFSL 1-054 \$17.

ROLLING STONES: *Sticky Fingers.* MOBILE FIDELITY MFSL 1-060 \$17.

CROSBY, STILLS & NASH: *CSN.* NAUTILUS NR 48 \$14.95.

CARS: *Caody O.* NAUTILUS NR 49 \$14.95.

KENNY ROGERS: *The Gambler.* MOBILE FIDELITY MFSL 1-044 \$17.

STEELY DAN: *Aja.* MOBILE FIDELITY MFSL 1-033 \$17.

GROVER WASHINGTON JR.: *Wine-light.* NAUTILUS NR 39 \$14.95.

THE DOORS. MOBILE FIDELITY MFSL 1-051 \$17.

ELTON JOHN: *Greatest Hits, Volume 1.* NAUTILUS NR 43 \$14.95.

GERRY RAFFERTY: *City to City.* MOBILE FIDELITY MFSL 1-058 \$17.

FRANK SINATRA: *Nice 'n' Easy.* MOBILE FIDELITY MFSL 1-086 \$17. □

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Best of the Month

Stereo Review's Selection of Recordings of Special Merit

Clear, Natural Singing,
Marvelous Sound in
Vocal Ensembles from
DG's Brahms Edition

THE monumental Brahms Edition, Deutsche Grammophon's imposing sixty-two-disc, all-inclusive commemoration of the Brahms sesquicentennial, includes a five-disc set devoted to various collections of vocal duets and quartets with piano accompaniment, in some cases with choral participation as well. Except for the two sets of *Liebesslieder* Waltzes (Opp. 52 and 65), which have been recorded several times before, most of the works are unfamiliar, so the new set should offer discoveries even to seasoned collectors.

Collections of this kind are, of course, the "documentaries" of record collect-

ing—of greater interest, perhaps, to institutions and libraries than to individuals. I certainly would not recommend listening to more than one record side (thirty minutes) per sitting, let alone all ten of them. Actually, listening in small segments allows for a better focus on the set's individual attractions.

In the five groups of duets, the voice parts are distributed among soprano, alto, and baritone. The texts come from Goethe, Mörike, and Eichendorff, from various German folk sources (including *Des Knaben Wunderhorn*), and from Bohemian, Italian, and Scottish folk collections. Not all of these brief inspi-

Edith Mathis, Brigitte Fassbaender, Peter Schreier, and Dietrich Fischer-Dieskau



rations are of equal merit, but the evocative *Die Nonne und der Ritter* (Op. 28, No. 1), the beautifully harmonized *Phänomen* (Op. 61, No. 3), and the two-part *Klänge* (Op. 66, Nos. 1 and 2) are particularly attractive. Brahms's treatment of the familiar Scottish ballad *Edward* (Op. 75, No. 1), however, is less memorable than Karl Loewe's.

The singing of the duets by Edith Mathis, Brigitte Fassbaender, and Dietrich Fischer-Dieskau is distinguished throughout. Tenor Peter Schreier joins them for the two *Liebeslieder* groups, which are done at a cosy, unhurried pace and are graced by lively and lilting piano accompaniments. A particularly impressive demonstration of ensemble precision is offered in Op. 52, No. 4. All four singers are also excellent here, though Fischer-Dieskau occasionally over-emotes in some of his passages in the second *Liebeslieder* group.

Except for the four little gems that constitute Op. 92, I find the later quartets less effective; in them Brahms seems to have indulged his contrapuntal skill at the expense of spontaneity. The singers, however, remain above reproach. Mathis has all to herself the fourteen *Volks-Kinderlieder* (dedicated to the children of Robert and

Clara Schumann), and she performs them with engaging humor and naturalness. Both these and the *Deutsche Volkslieder* (except the ones with chorus) were previously released on DG, but their reappearance in this set is welcome. They are a treasure trove of the poetic subjects (rustic scenes, folk legends, religious imagery, Gothic tales) that form such a significant part of German lieder, and not only those of Brahms. Some less devoted listeners will find a bit of monotony here and there, but there is much beauty in the melodies and in Brahms's affectionate and unpretentious settings. Mathis and Schreier present these songs with exceptional clarity and endearing naturalness. They are particularly effective in the duet settings, which are extraordinarily dramatic.

It is not likely that this phase of Brahms's activity will ever again be displayed in such a well-organized and clearly laid-out manner—or, for that matter, that the songs will ever get better performances. Karl Engel has the greatest share of the piano work, and he is excellent throughout. In the *Liebeslieder* he is joined at the piano by conductor Wolfgang Sawallisch, and their lively collaboration is lovingly spot-

lighted by the engineers. DG has again provided model annotations, and the sound (digital in the first three discs) is marvelous. —George Jellinek

BRAHMS: Vocal Ensembles. *Three Duets, Op. 20; Four Duets, Op. 28; Four Duets, Op. 61; Five Duets, Op. 66; Four Ballads and Romances, Op. 75; Three Quartets, Op. 31; Liebeslieder Waltzes, Op. 52; New Liebeslieder Waltzes, Op. 65; Three Quartets, Op. 64; Four Quartets, Op. 92; Three Quartets from Zigeunerlieder, Op. 103; Six Quartets, Op. 112; Volks-Kinderlieder; Deutsche Volkslieder.* Edith Mathis (soprano); Brigitte Fassbaender (contralto); Peter Schreier (tenor); Dietrich Fischer-Dieskau (baritone); Karl Engel, Wolfgang Sawallisch, Gernot Kahl (piano); North German Radio Chorus, Hamburg, Günter Jena cond. DEUTSCHE GRAMMOPHON ● 2740 280 five discs \$39.90.

Mark Knopfler's Beautiful, Powerfully Exciting Film Soundtrack for *Local Hero*

LOCAL HERO is an offbeat, whimsical film about a junior oil executive from Houston who's sent to Scotland to negotiate for the purchase of an entire coastal village so his company can build a refinery there. The twist is that the villagers *don't* band together to save their homes and land from the big corporation. Rather, they conspire to get the most lucrative deal they can from it. The challenge for soundtrack composer Mark Knopfler (of Dire Straits) was to create music that would evoke the rustic charm of the village at the same time its inhabitants are scrambling to sell it out. Knopfler met the challenge with a series of programmatic compositions for synthesizer and guitar and string-band music inspired by Scottish folk tunes—music that is alive with the sea and stars, wool and malt whiskey. It is a brilliant accomplishment.

In composing the music for *Local Hero*, Knopfler was able to do something that's all but impossible for anyone working within the strictures of pop album making: he took a theme and developed it. In the soundtrack album, the *Local Hero* theme appears five times in five different arrangements—for acoustic guitar and synthesizer, for pennywhistle, for jug band, for solo synthesizer, and for rock band—and it seems to grow in power and beauty with each version. Its various incarnations paint an aural canvas of the village at work and at rest: the bleached complexion of coastal buildings, the collision of

Guitarist and composer Mark Knopfler



Edel Roberts

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gray sea and crimson sky, the flushed cheeks of a young couple at a Saturday night dance. In contrast, Knopfler's folk-like tunes are played by the Acetones with the raw, unvarnished appeal of a small village band caught on the cusp of modern rock and their native traditions. At times, Knopfler even weaves Alan Clarke's synthesizer together with the rough-edged Acetones to suggest the string and reed choirs in an orchestra, as on his stirring arrangement of the traditional Scottish tune, *The Mist Covered Mountains*.

The music Knopfler wrote to depict the Americans in the film sticks out like a drilling rig against a North Sea sunset. *Freeway Flyer*, a four-on-the-floor, lane-shifting break-down, is notable for giving Knopfler a chance to show off his formidable guitar technique. *Boomtown* is a cocktail-lounge jazz piece fueled by the bluesy sax of Mike Brecker, and *The Way It Always Starts* is a diluted Tex-Mex ballad sung by Gerry Rafferty. Except for *Freeway*, they pass by like just another day in the rat race, which may say as much about the cultures that collide in *Local Hero* as anything that happens in the movie.

Mark Knopfler's soundtrack for *Local Hero* makes a brilliantly realized al-

bum of luminous themes and exciting contrasts. Whether you see the movie or not, this music will take you to another world and make you hear, feel, even smell it. It's that good.

—Mark Peel

LOCAL HERO (Mark Knopfler). Original-soundtrack recording. Mark Knopfler (guitars); Alan Clarke (synthesizers); Gerry Rafferty (vocals); the Acetones (instrumentals); other musicians. WARNER BROS. 23827-1 \$8.98, © 23827-4 \$8.98.

Susannah McCorkle's Finest Yet: Wonderful Songs, Wonderful Singing

I HAVE admired singer Susannah McCorkle ever since she first came to my attention, but I sometimes wondered if my enthusiasm had not been colored to some degree by the wonderful songs she sang. After all, her three previous Inner City albums were devoted to the highly original works of Johnny Mercer, "Yip" Harburg, and

Harry Warren. But I am now totally convinced that in her choice of material she was merely demonstrating yet another facet of her considerable talent: superb taste.

"The People That You Never Get to Love" is a new Inner City album that represents a departure for Susannah McCorkle. Here she sings fourteen songs by as many composers or teams, and the result is unquestionably her finest album to date. Accompanied by a quartet under pianist Keith Ingham's sensitive leadership, she again demonstrates her knack for finding material that may be obscure but is consistently wonderful. As she effortlessly wends her way through the subtleties of her well-chosen program, she also reveals a new and very prepossessing maturity. She has the ability to absorb the finer attributes of other singers and knead them into her own personal style; when you hear Susannah McCorkle caress a song, you know that she has done some very intelligent, selective listening. And it is a joy to listen to her as she conveys nuances that others let slip by.

Every selection on "The People That You Never Get to Love," which takes its title from a sinfully delightful song by Rupert Holmes, is a highly polished gem, from Dave Frishberg's whimsical *Foodophobia* to the familiar *I've Grown Accustomed to His Face*. I can think of no greater compliment a songwriter can get than to have a song performed by the increasingly inimitable Susannah McCorkle.

—Chris Albertson

SUSANNAH McCORKLE: *The People That You Never Get to Love*. Susannah McCorkle (vocals); instrumental accompaniment. *No More Blues; The Hungry Years; Alone Too Long; I Won't Dance; I'm Pullin' Through; Foodophobia; Bye Bye Country Boy; Rain Sometimes; The Lady's in Love with You; I Have the Feeling I've Been Here Before; The People That You Never Get to Love; The Call of the City; I've Grown Accustomed to His Face; The Feeling of Jazz.* INNER CITY IC 1151 \$8.98.

Academy of Ancient Music: Mozart's Symphonies Played as He Intended

THE Academy of Ancient Music has certainly earned recognition as one of the finest orchestras performing on period instruments, but now, with the release of Volume 6 in the group's re-

Susannah
McCorkle



Nancy Greenwell



Christopher Hogwood (left) and Jaap Schröder

ording of all of Mozart's symphonies on L'Oiseau-Lyre, it must simply be considered one of the finest orchestras performing music of the Classical period, regardless of the instruments employed. This four-disc, digitally recorded set magnificently completes the series launched under Christopher Hogwood's direction more than three years ago (Volume 7 was released a few months ago). It is especially welcome because it brings together so many of the composer's noblest and most familiar symphonies, including the *Paris*, the *Haffner*, the *Prague*, and the *Jupiter*, and because, as the first digitals in the series, they are so beautifully recorded.

Much of the success of these performances is, of course, simply the result of using the instruments for which Mozart wrote. You hear what Mozart intended you to hear. A telling example of the effectiveness of authentic instruments is in the opening of the G Minor Symphony (No. 40), where each note is distinctly heard instead of being submerged in the rustle we usually get from modern orchestras. The sharper contrast between strings and woodwinds afforded by period instruments also produces a stronger sense of dialogue in the second theme of the first movement, and the clarity of the Classical strings etches a sharp figure when the opening theme reappears in the de-

velopment. The real miracle, however, is in the finale of the *Jupiter*. For once Mozart's contrapuntal pyrotechnics are clear, and they bring the movement to an almost unbearable peak of excitement. This list of revelations could continue almost phrase by phrase. The gist of it is that you simply *hear more* in these performances.

But the use of authentic instruments is not the only reason these readings are so distinguished. Much of the credit also belongs to the joint leadership of Hogwood, who plays continuo, and concertmaster Jaap Schröder, and the rest goes to the splendid ensemble of players they have assembled. Throughout, the tempos are well chosen, the pacing is elegant, and the phrasing is precise. All in all, this set offers some of the finest Mozart playing around.

—Stoddard Lincoln

MOZART: *The Symphonies, Vol. 6. No. 31, in D Major (K. 300a/297, "Paris," first and second versions); No. 35, in D Major (K. 385, "Haffner," second version); No. 38, in D Major (K. 504, "Prague"); No. 39, in E-flat Major (K. 543); No. 40, in G Minor (K. 550, first version); No. 41, in C Major (K. 551, "Jupiter").* Jaap Schröder (concertmaster); Christopher Hogwood (continuo); the Academy of Ancient Music, Jaap Schröder and Christopher Hogwood cond. L'OISEAU-LYRE ● D172D4 four discs \$51.92, © K172K43 \$51.92.

Best of the Month

Recent selections
you might have missed

POPULAR

- **Joan Baez: *Very Early Joan*.** VANGUARD VSD-79446/7. "... a spellbinding album by one of the most influential... popular artists of our time." (August)
- **Angela Bofill: *Too Tough*.** ARISTA AL 9616. "Polished, powerful, and pretty." (June)
- **Phil Collins: *Hello, I Must Be Going!*** ATLANTIC 80035-1. "... an eclectic, well-crafted album..." (June)
- **Kate and Anna McGarrigle: *Love Over and Over*.** POLYDOR 422-810 042-1 Y-1. "... an aural delight..." (May)
- **John McLaughlin: *Music Spoken Here*.** WARNER BROS. 23723-1. "... further explores and enlarges the acoustic/electric synthesis..." (May)
- **Lou Reed: *Legendary Hearts*.** RCA AFL1-4568. "Passionate and inspiring rock-and-roll." (July)
- **Carlos Santana: *Havana Moon*.** COLUMBIA FC 38642. "Soulful, fresh, and personal." (August)
- **Simon & Bard Group: *Tear It Up*.** FLYING FISH FF 262. "Sophisticated music played with feeling." (July)
- **Mel Tillis: *After All This Time*.** MCA MCA-5378. "... one of country music's real vocal masters." (July)
- **ZZ Top: *Eliminator*.** WARNER BROS. 23774-1. "Hard-rocking, low-riding, sleazy, and funny." (August)

CLASSICAL

- **Bartók: *String Quartets Nos. 1-6*.** CBS 13M 37857. "The Juillard Quartet's third Bartók set ranks among the very finest." (May)
- **Mozart: *Piano Concertos Nos. 20 and 27*.** LONDON CS 7251. "Elegant, passionate, and committed performances from Sir Clifford Curzon..." (August)
- **Mozart: *Opera Arias*.** PHILIPS 6514 319. "Marvelous music, gorgeous singing by Kiri Te Kanawa." (July)
- **Poulenc: *Solo Piano Music*.** EMI/PATHÉ MARCONI C 069-73101. "A glowing new collection from Gabriel Tacchino... irresistible." (June)
- **Rachmaninoff: *Symphony No. 3; The Isle of the Dead*.** DEUTSCHE GRAMMOPHON 2532 065. "Definitive interpretations by Lorin Maazel, stunning digital sound." (July)
- **Schubert: *Piano Sonata in B-flat Major*.** HYPERION A66004. "... an exceptional realization of a great work." (August)
- **Shostakovich: *Symphony No. 5, Op. 47*.** LONDON LDR 71051. "State-of-the-art sound, illuminating reading." (May)
- **R. Strauss: *Death and Transfiguration; Four Last Songs*.** ANGEL DS-37887. "Profoundly satisfying..." (June)

Classical Music

News Briefs

Chicago Symphony Orchestra



Gus, the Chicago Symphony cat, with friends



Eric Britsaud

Aldo Ciccolini and Luna

TRADITIONALLY, donors to the Chicago Symphony's annual fund-raising marathon may make their contributions in honor of either dogs or cats, depending on their sympathies. Traditionally, too, the dog lovers prove to be marginally more numerous or more generous, or both, and this year was no exception. The dog fund pulled in a total of \$45,172 for the orchestra, nuzzling ahead of the cat fund by a mere \$713, which seems not to have pleased the orchestra's cat-in-residence, **Gus** (short for Gustav, as in Mahler). Gus is pictured here with the CSO's general manager, **John S. Edwards**, and one of the orchestra's violinists, **Tom Hall**.

One of the premiums for donors was a collection of ballet music recorded by the CSO over a period of fifty years, from the days of conductor Frederick A. Stock to the present (represented by three unreleased excerpts from Prokofiev's *Romeo and Juliet* conducted by music director Sir Georg Solti). The record is still available for \$15 plus \$3 shipping for each copy. Orders should be ad-

dressed to the Women's Association, Chicago Symphony, 224 South Michigan Avenue, Chicago, Ill. 60604. □

PIANIST **Aldo Ciccolini**, who is shown above with feline companion **Luna**, is at present touring North America, with engagements ranging from Seattle to Toronto to Miami. The French EMI artist has also just completed recording Isaac Albéniz's *Piano Concerto* and Falla's *Nights in the Gardens of Spain* with the London Symphony under Enrique Bátiz.

Angel, Ciccolini's U.S. label, reports that the first album in his six-record survey of the piano music of Erik Satie (S-36482) is the sixth best-selling recording in the company's catalog—also that, all told, Ciccolini's Satie records and tapes have sold well over a quarter of a million copies, making Satie the best-selling twentieth-century composer on Angel Records. □

THE Arthur Rubinstein International Piano Master Competition in Tel Aviv, Is-

rael, was won this year by the young American **Jeffrey Kahane**. A native of Los Angeles and a graduate of the San Francisco Conservatory of Music, Kahane was a prize winner in the Clara Haskil Competition and won the fourth prize in the 1981 Van Cliburn International Piano Competition. His Rubinstein award includes \$10,000, a gold medal, and numerous engagements for orchestral appearances and solo recitals in the United States and elsewhere. A record contract is under negotiation. □



THE U.S. Postal Service is issuing a twenty-cent commemorative stamp to mark the one hundredth anniversary of the Metropolitan Opera, the first time the post office has honored an opera company. Designed by Ken

Davies of Madison, Connecticut, the first-class stamp will be printed in yellow and maroon, possibly to suggest the gilt and deep red plush of the house itself. The first-day-of-issue ceremony is being held September 14 at the Met. □

THE **Canadian Brass**, one of the most popular touring ensembles in the business, is newly represented on records and tapes released by both RCA and CBS, and while the repertoire in each case is typical of what the group plays in concert, the recordings differ markedly in content. The CBS entry, "Champions" (FM 37797, © FMT 37797), is basically a collection of popular standards in the attractive arrangements for which the Canadian Brass are known. The RCA album, "High, Bright, Light and Clear" (ARC1-4574, © ARE1-4574), which is digitally recorded, brings together a number of familiar Baroque pieces. Two of them will be especially familiar to weekend television viewers: a rondo by Jean Joseph Mouret that introduces *Masterpiece Theatre*

on PBS and a fanfare by Johann Gottfried Reiche that early risers will recognize as the theme music for CBS Television's *Sunday Morning* news program.

RCA recently reissued its recording of the Mozart Clarinet Quintet, K. 581, played by **Richard Stoltzman** and **Tashi** (AGLI-4704, © AGK1-4704), and before long more copies were sold than in all the time it had been available before being deleted a year ago. The reason: the music served in part as background for the widely viewed final episode of *M*A*S*H* on television earlier this year. □

TWO technically improved, low-priced series of catalog classics have just been introduced, one by RCA called *Legendary Performers* and the other by CBS called *Masterworks Portrait*. Both are available on LP's and prerecorded cassettes.

RCA's Red Seal division vice president **Thomas Z. Shepard** defined his company's new series, saying it features "remarkable performances by the world's most important artists in *digitally remastered* sound [editor's ital-

ics] . . . aimed at consumers who are interested in classical music but who are not sure how to begin building the basic repertoire library." The first release comprises twenty titles, with a suggested list price of \$5.98.

CBS Masterworks A&R chief **Peter Munves** describes the *Portrait* albums as "new Dolby-A transfers of original master tapes [that] have been specially produced" for this series, offering extended dynamic range and "the cleanest reproduction these master recordings have ever enjoyed." There are forty titles altogether, selling in the mid-price range. □

SEVENTEEN years ago New York's Metropolitan Opera opened its first season at Lincoln Center with a performance of **Samuel Barber's** *Antony and Cleopatra*. It was considered a total washout—overproduced and overlong. Unlike the queen's barge, it looked as though the opera itself would sink to the bottom of the Nile never to be heard again, but some years later the Juilliard School of Music in New York mounted a scaled-down version made by



Esther Hinds as Cleopatra

the composer and **Gian Carlo Menotti** that breathed new life into the work. It was this version, in a handsome production directed by Menotti and conducted by **Christian Badea**, that was revived at the Spoleto Festival in Charleston, South Carolina, early this

summer, with **Esther Hinds** especially impressive in the role of Cleopatra. And it was this version that New World Records recorded in Italy when the Charleston company played the *real* Spoleto Festival in June and July 1984. □

Disc and Tape Reviews

By RICHARD FREED • DAVID HALL • GEORGE JELLINEK
STODDARD LINCOLN • ERIC SALZMAN

J. S. BACH: *St. Matthew Passion*. Jon Garrison (tenor), Evangelist; Hans Georg Ahrns (bass), Jesus; Kristina Laki (soprano); Ann Murray (contralto); David Britton (tenor); Harold Stamm, Benjamin Luxon (bass); Hanover Boys Choir; NDR Chorus and Symphony Orchestra, Raymond Leppard cond. ANGEL ① DSCX-3934 three discs \$38.94, © 4X3X-3934 \$38.94.

Performance: **Solid**
Recording: **Fine**

This performance may be characterized as solid, careful, and straightforward. The orchestral and choral balances are generally

very good, and the whole reading is evenly paced. Among the soloists, Kristina Laki and Benjamin Luxon are excellent, and Jon Garrison, as the Evangelist, discharges his narrative clearly though nasally. Ann Murray sings musically, but her voice is not quite rich enough for the profoundest moments. Unfortunately, solidity, care, and straightforwardness are not enough to give excitement to such a dramatic work; Raymond Leppard's even pacing is perhaps more appropriate to the St. John Passion than to the urgency of the St. Matthew. The digital sound is splendid, however. *S.L.*

BIZET: *Symphony in C Major; Jeux d'Enfants, Suite; Patrie Overture*. Orchestre Nationale de France, Seiji Ozawa cond. ANGEL ① DS-37928 \$12.98, © 4XS-37928 \$12.98.

Performance: **Neatly turned**
Recording: **Spacious**

Beginning with conductor Roger Desormière's record in the late Forties, the combination of these three Bizet works has been a popular one on LP's. Seiji Ozawa's is the first digital recording. His reading of the

delectable, youthful *Symphony in C Major* is amiable rather than pert but enjoyable nonetheless. The five pieces orchestrated by Bizet from his suite for piano four-hands, *Jeux d'Enfants*, get an appropriately light and fanciful treatment, and the *Patrie Overture* benefits from a broadly lyrical approach and a welcome soft-pedaling of the bombastic element so uncharacteristic of Bizet. The sound is rich and spacious. *D.H.*

BEETHOVEN: *Egmont Overture, Op. 84* (see MENDELSSOHN)

BRAHMS: *Vocal Ensembles* (see *Best of the Month*, page 81)

FINZI: *Cello Concerto, Op. 40*. Yo Yo Ma (cello); Royal Philharmonic Orchestra, Vernon Handley cond. LYRITA SRCS.112 \$13.98 (from International Book & Record Distributors, 40-11 24th Street, Long Island City, N.Y. 11101).

Performance: **Excellent**
Recording: **Generally good**

Gerald Finzi (1901-1956) is often thought of as a latter-day British pastoral-lyric com-

Explanation of symbols:

- ① = digital-master analog LP
- ② = stereo cassette
- ③ = digital Compact Disc
- ④ = eight-track stereo cartridge
- ⑤ = direct-to-disc recording
- ⑥ = monophonic recording

The first listing is the one reviewed; other formats, if available, follow it.



Fugère / Deutsche Grammophon

Lucia Valentini Terrani (Fenena) and conductor Giuseppe Sinopoli

A Stirring Nabucco

GIUSEPPE SINOPOLI, surely a major conductor in emergence, is still a young man (he was born in 1946), but his photographs disclose a face straight out of the Old Testament. Verdi's *Nabucco* thus seems like a preordained vehicle for his operatic recording debut, which it is. Actually, this Deutsche Grammophon recording is the outgrowth of a Berlin stage production that Sinopoli led with great success in May 1982. The press kit for the release contains an interview in which the maestro indulges in a certain amount of nebulous

theorizing about Verdi's operas. Frankly, it worried me for a bit, but my apprehensions soon vanished when I discovered that Sinopoli had clear-cut ideas about the score and no difficulty whatever in conveying them with vigor and incisiveness in performance. The result, in fact, is the most stirring account this opera has ever had on records.

The singers, however, must share in the credit. In the title role, veteran Piero Cappuccilli may not have the individuality that can make even a less-than-optimal Tito Gobbi interpretation (London OSA 1382)

leap off the grooves in striking colors, but he is in opulent voice, encompassing the wide range of the music Verdi gives him. Cappuccilli sounds both human and regal in the bargain. Placido Domingo is in a class by himself in the not very prominent role of Ismaele, and Lucia Valentini Terrani brings a voluptuous tone to Fenena's predominantly gentle music. I miss a certain gravity in Evgeny Nesterenko's Zaccaria (he sounds more like a bass-baritone than a true bass on this occasion), but his cleanly focused tones are a joy to hear after a plethora of gruff and gravelly basses, and his top range is imposing.

All this is unsurprising. The surprise is Bulgarian soprano Ghena Dimitrova, who has a genuine dramatic voice with thrust and temperament yet enough sensitivity and technique to sing with delicacy when the music demands it. If she is not yet an international celebrity, she will be one in no time if she continues to sing as she does here. And having Lucia Popp in the small role of Anna is also an unexpected bonus.

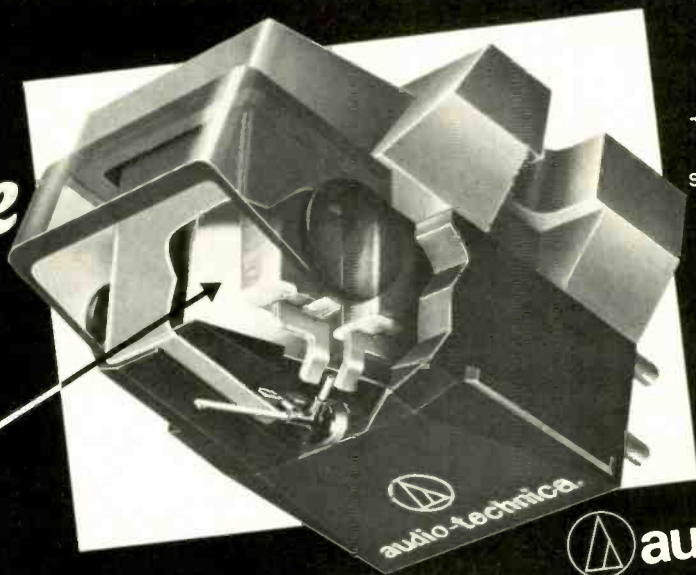
The Berlin chorus sounds fine but has some trouble with articulation. The orchestra is heavily favored in the balances, and Sinopoli draws powerful sonorities from it (*à la* Solti) with fearsome chords that tend to obliterate the voices, choral as well as individual. But, when all is said and done, this is the most satisfying recording of any Verdi opera to come my way in a good long time.
—George Jellinek

VERDI: *Nabucco*. Piero Cappuccilli (baritone), Nabucco; Placido Domingo (tenor), Ismaele; Evgeny Nesterenko (bass), Zaccaria; Ghena Dimitrova (soprano), Abigaille; Lucia Valentini Terrani (mezzo-soprano), Fenena; Kurt Rydl (bass), High Priest of Baal; Volker Horn (tenor), Abdallo; Lucia Popp (soprano), Anna. Chorus and Orchestra of the German Opera, Berlin, Giuseppe Sinopoli cond. DEUTSCHE GRAMMOPHON ● 2741 021 three discs \$38.94, © 3382 021 \$38.94.

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poser such as George Butterworth, John Ireland, and Ralph Vaughan Williams (in his gentler works), but the first movement of his Cello Concerto (1951–1955) is made of tougher fiber. While there are elements of late Elgar and of Walton here and there, the effect of the movement as a whole is one of passion laden with tragic import. The solo role is highly exacting and features an elaborate and brilliant cadenza at the close. The slow movement, on the other hand, finds Finzi at his most poignant and consolatory. After its slow introduction, the polonaise-like finale is somewhat akin to that of the Sibelius Violin Concerto—brilliant and high-spirited yet essentially lyrical.

Made in 1979, this British recording appears to have been the disc debut of Yo Yo Ma, who had won the Avery Fisher Prize the year before. His performance here is altogether brilliant, and he is backed by knowing orchestral playing under Vernon Handley's direction. *D.H.*

RECORDING OF SPECIAL MERIT

GRIFFES: *Fantasy Pieces, Op. 6; Roman Sketches, Op. 7; Sonata; Three Tone-Pictures, Op. 5.* Noël Lee (piano). NONESUCH H-71409 \$5.98, © H4-71409 \$5.98.

Performance: **Communicative**
Recording: **Handsome**

A note on the jacket advises that this recording was made in Copenhagen in December 1977; it has taken a long time to reach us, but it appears to be the most generous collection of Charles Tomlinson Griffes's piano works yet offered on a record. It is also especially welcome in Nonesuch's original low-priced series.

The first and last of the four *Roman Sketches*—*The White Peacock* and *Clouds*—were orchestrated by Griffes himself, as was the scherzo that concludes the three *Fantasy Pieces* (called *Bacchanal* in the orchestral version), and all three have been recorded in the orchestrated versions. In each case, both the piano and orchestral settings have their own allure, just as in the music of Ravel, so it is good to have all the originals as knowingly set forth as they are here by Noël Lee. His fine performances are handsomely recorded (by Peter Willemoës), the surfaces are exemplary, and the annotation is by the Griffes authority Donna K. Anderson. *R.F.*

HAYDN: *Trumpet Concerto in E-flat Major* (see Popular Discs and Tapes, page 110)

HUMMEL: *Trumpet Concerto in E-flat Major* (see Popular Discs and Tapes, page 110)

JOPLIN: *Ragtime Music* (see Collections—Katia and Marielle Labèque)

RECORDING OF SPECIAL MERIT

KODÁLY: *String Quartet No. 1, Op. 2; String Quartet No. 2, Op. 10.* Kodály Quartet. HUNGAROTON ● SLPD 12362 \$12.98.

Performance: **Intensely beautiful**
Recording: **Excellent**

In the landscape of twentieth-century music, Zoltán Kodály is a difficult figure to

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place. He is invariably associated with Hungarian folk music, with Bartók, and with choral singing and training. But his music is not like Bartók's, and as a folklorist he sometimes seems to belong not to this century but to the last. Kodály's music could not have been written in the nineteenth century, but, particularly in his early chamber music, he is as much the legitimate heir of late Romanticism as, say, Richard Strauss. Yet, at the same time, he was able to put a considerable distance between himself and the Central European or Slavic Romantics who should have been his natural ancestors. In a sense, Kodály invented a genuine, home-grown Romantic style for a country that really didn't have

any. That's quite an accomplishment when you think about it.

These relatively early string quartets—they date from 1908-1909 and 1918—illustrate the point. The First Quartet is obviously connected with Romanticism, particularly in the last two movements, but it is hard to say exactly with whom or what. The vein of originality is even more easily appreciated in the Second Quartet, which is much more condensed and much more obviously folkloric. It's not necessarily the better work, but it is a more "modern" interpretation of the same point of view. Both are intensely studied and gorgeously performed by a quartet named for the composer in a superb digital recording. *E.S.*

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"... although it was better than we had anticipated, it still was far behind our reference Linn/Ittok/Asak T combination in pure sound quality." — Chris Frankland

"In my view it still has some way to go before it is as good as the best analogue disc playing systems." — Jonathan Kettle

For a complete reprint of the review, and other information on the turntable that beat the compact disc, circle the reader service number listed below.



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RECORDING OF SPECIAL MERIT

MARTINŮ: *String Quartet No. 1*. Panocha Quartet. SUPRAPHON 1111 3018 G \$9.98 (from Intersound Inc., 14025 23rd Avenue North, Minneapolis, Minn. 55441).

Performance: **Excellent**
Recording: **Excellent**

The Panocha Quartet's survey of the seven string quartets of Bohuslav Martinů is almost complete now, only Nos. 2 and 3 remaining to be covered. The last four quartets, already issued, may be the strongest works in the cycle, but No. 1 is an intriguing piece in its somewhat less disciplined way—a sort of prelude to the more individualistic works to follow. Martinů called this work of 1921 his "French" Quartet because of its echoes of Debussy and Ravel, but there are other echoes, too—of Dvořák and Kodály. Although Martinů showed a more distinctively personal character in subsequent works, his blending of these disparate elements is gratifying. As in the earlier installments, the Panocha Quartet plays with enormous conviction and polish. *R.F.*

MENDELSSOHN: *Symphony No. 3, in A Minor, Op. 56 ("Scottish")*. **BEETHOVEN: *Egmont Overture, Op. 84***. Philadelphia Orchestra, Eugene Ormandy cond. RCA ARL1-4359 \$8.98, © ARK1-4359 \$8.98.

Performance: **Bland Mendelssohn**
Recording: **Very good**

Eugene Ormandy and his players come through with a virile and warm-blooded reading of Beethoven's *Egmont Overture*, but, for all the finesse of the orchestral execution, Mendelssohn's *Scottish* Symphony fares less well. The opening promises a richly lyric reading, which this one certainly is, but the windswept vistas evoked in the scherzo seem rather pale and undramatic. The adagio is as mellifluous as one could wish, but the main body of the finale could do with a shade more bounce. The epilogue is massive and grandiose and very nearly convincing. In all, though, this is rather bland Mendelssohn. Splendid, warm sound throughout. *D.H.*

L. MOZART: *Trumpet Concerto in D Major* (see *Popular Discs and Tapes*, page 110)

W. A. MOZART: *Andante in C Major, K. 315* (see *WEBER*)

W. A. MOZART: *Symphonies Nos. 31, 35, 38, 40, and 41* (see *Best of the Month*, page 84)

RECORDING OF SPECIAL MERIT

PROKOFIEV: *Cinderella, Op. 67*. Moscow Radio Symphony Orchestra, Gennady Rozhdestvensky cond. MUSICAL HERITAGE SOCIETY MHS 824651 two discs \$16.50 (plus \$1.60 postage and handling charge from the Musical Heritage Society, 14 Park Road, Tinton Falls, N.J. 07724).

Performance: **Richly vital**
Recording: **Expansive**

Although this is a reissue of a 1967 recording that made its initial appearance here

on Melodyia/Angel, the "Special Merit" tag is awarded not only by virtue of its being the only complete recording of Prokofiev's masterly *Cinderella* ballet but also because of Gennady Rozhdestvensky's marvelously idiomatic reading. The recording is slightly blowsy by today's standards, but its somewhat exaggerated spaciousness seems to me appropriate to the grandeur of a three-act Soviet ballet that is a lineal descendant of Tchaikovsky's *Sleeping Beauty*.

The fifty numbers in the complete score display a level of musical craftsmanship fully as various and colorful as that which Tchaikovsky brought to his more famous ballet. Along with the justly celebrated waltz and the terrifying midnight transformation scene, there are delightfully comic episodes depicting the ugly stepsisters and some cinematically derived "modern" elements that must have required considerable nerve on Prokofiev's part at the peak of the Stalin regime. The record is thoroughly enjoyable, and the extensive and informative program notes by Peter Rabinowitz are a welcome bonus. *D.H.*

RAVEL: *Boléro; Daphnis et Chloé, Suite No. 2; Alborada del Gracioso.* Singing City Choir of Philadelphia (in *Daphnis*); Philadelphia Orchestra, Riccardo Muti cond. ANGEL ● DS-37885 \$12.98, © 4XS-37885 \$12.98.

Performance: **Fussy**
Recording: **High-powered**

RAVEL: *Boléro; Daphnis et Chloé, Suite No. 2; Pavane pour une Infante Défunte.* Ambrosian Singers (in *Daphnis*); London Symphony Orchestra, Árpád Joó cond. SEFEL ● SEFD 5004 \$15.95.

Performance: **Adequate to excellent**
Recording: **Clean and bright**

None of the performances in these two Ravel collections measure up interpretively to those in the similar digitally mastered releases by Charles Dutoit with the Montreal Symphony, Leonard Slatkin with the St. Louis Symphony, and Eduardo Mata with the Dallas Symphony.

In the *Alborada del Gracioso*, Riccardo Muti's reading is alternately super-macho and languid. The *Daphnis et Chloé* suite is treated too fussily, and at Muti's ultra-slow tempo *Boléro* becomes an oppressive juggernaut of a piece. The Angel recording, however, sounds big and rich, with very wide dynamics.

Árpád Joó, whose Budapest-recorded survey of the Bartók orchestral repertoire released last year on the Canadian Sefel label was extraordinary, has not been able to produce equally fine readings of the more-or-less standard repertoire in his recordings with the London Symphony, also for Sefel. His Kodály and Janáček disc did not quite hit the mark, and the same is true for this Ravel collection. At least the performances are unfussy and the tempos right. The *Pavane* is a bit untidy in spots; it is a difficult piece to play well despite its seeming simplicity. *Boléro* comes off best here, with a well-chosen, steady tempo and some interesting twists in the climactic build-up. The digital sonics are clean and bright. *D.H.*

ROSSINI: *Theme and Variations for Clarinet and Orchestra* (see WEBER)

RECORDING OF SPECIAL MERIT

SCHUBERT: *Octet in F Major for Strings and Winds, Op. 166.* Boston Symphony Chamber Players. NONESUCH ● D-79046 \$11.98, © D4-79046 \$11.98.

Performance: **Elegant**
Recording: **Splendid**

The Boston Symphony Chamber Players stress the lyric qualities of Schubert's wonderful octet and turn in an exquisitely phrased performance that glows with warmth. Each of the musicians is a soloist in his own right, but as experienced orchestral players they are able to achieve an excellent ensemble and to balance the difficult

sonorities of this piece. Avoiding virtuosic display and dwelling on the melodic lines, they deliver an elegant performance, full of loving detail—all beautifully caught in the digital recording. *S.L.*

RECORDING OF SPECIAL MERIT

SHOSTAKOVICH: *Symphony No. 10, in E Minor, Op. 93.* London Symphony Orchestra, André Previn cond. ANGEL ● DS-37955 \$12.98, © 4XS-37955 \$12.98.

Performance: **Warmly eloquent**
Recording: **Very good**

There is much to be said for André Previn's new recording of the masterly Tenth Sym-

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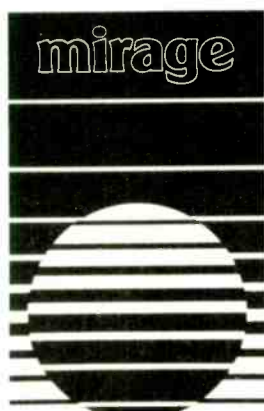
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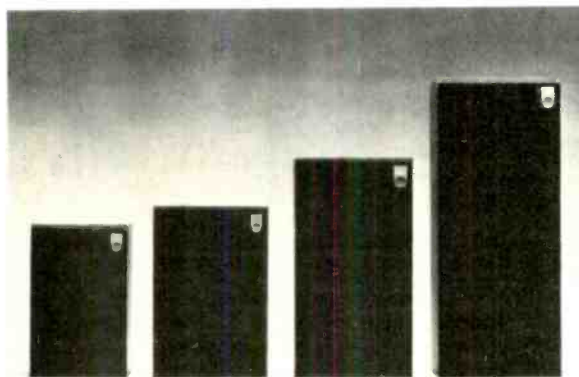
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phony of Dmitri Shostakovich. Though this performance may not convey the blinding intensity of Herbert von Karajan's two readings for Deutsche Grammophon, Previn's slightly more relaxed pacing enables the listener to assimilate the musical message more readily. The opening movement gains most, for where Karajan's orchestral colorations seem almost iron gray and predominantly bleak, Previn helps us believe there *is* "balm in Gilead." Karajan still has the best of it in the terrifying scherzo, though Previn comes off with a finely pointed ending to the movement.

Warmth, eloquence, and a nice "give" in phrasing and rhythm again characterize Previn's handling of the crucial allegretto. I would question here only a slight overbalancing of the horns as they signal the symphony's turning point from bleakness and uncertainty to realization of self. The London Symphony is on its toes from start to finish, and the sound is rich, brilliant, and satisfyingly spacious.

D.H.

RECORDING OF SPECIAL MERIT

R. STRAUSS: *Metamorphoses; Death and Transfiguration, Op. 24.* Berlin Philharmonic Orchestra, Herbert von Karajan cond. DEUTSCHE GRAMMOPHON 2532 074 \$12.98, © 3302 074 \$12.98.

Performance: **Immensely powerful**
Recording: **Awesome**

Written in 1945 as a "study for twenty-three solo strings," *Metamorphoses* is

Richard Strauss's cunningly textured and deeply moving threnody for the Germany he saw destroyed by World War II. It has had some remarkable recordings, beginning with the first one, which was conducted by Herbert von Karajan in 1948. The stereo version I have particularly treasured over the years is Klemperer's 1962 reading, still available on Angel (S-35976) with the same coupling as on this new Karajan disc. Klemperer had a wonderful feeling for the organic growth implicit in every musical line and dynamic point of this late masterpiece, and in his new recording Karajan not only brings out the same sense of inexorable growth but gives a shattering intensity to the climaxes. Indeed, one would have to go back to the days of Stokowski with the Philadelphia Orchestra or of Koussevitzky with the Boston Symphony to recall a string sonority comparable to what Karajan elicits here from his twenty-three Berlin virtuosos.

Karajan's reading of *Death and Transfiguration* makes an interesting contrast to Klaus Tennstedt's equally remarkable recent Angel recording. In Tennstedt's interpretation, the Transfiguration is everything. In Karajan's, the Transfiguration has its properly imposing place at the close, but it is the iron-fisted onslaught of death that haunts the whole work. The entire Berlin Philharmonic's performance here is as impressive as that of the selected string players in the *Metamorphoses*. The solid and brilliant digital sound is on a par with the best we have had from the Philharmonic in Berlin.

D.H.

RECORDING OF SPECIAL MERIT

TELEMANN: *Oboe Concertos in E Minor, D Minor, C Minor, F Minor, and D Major.* Heinz Holliger (oboe); Academy of St. Martin-in-the-Fields, Iona Brown cond. PHILIPS 6514 232 \$12.98, © 7337 232 \$12.98.

Performance: **Wonderful**
Recording: **Sensitive**

Telemann really outdid himself in these oboe concertos. For example, the opening dissonances of the C Minor are shocking even in our day; the second movement of the same work makes a dramatic shift from minor to major, and its slow movement is truly profound. Similar delights occur throughout these wonderful concertos. And Heinz Holliger plays them with a perfect blend of virtuosity and lyricism. The same qualities are reflected in the beautifully wrought ritornellos and accompaniments by the Academy of St. Martin-in-the-Fields, led by Iona Brown. This is top-drawer Telemann, exquisitely performed.

S.L.

VIERNE: *Symphony No. 2, in E Minor, for Organ, Op. 20.* David M. Patrick (organ). SAGA 5487 \$8.98 (from International Book & Record Distributors, 40-11 24th Street, Long Island City, N.Y. 11101).

Performance: **Excellent**
Recording: **Superb**

Louis Vierne was born in 1870, studied with Franck and Widor (organists both) at the



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Paris Conservatoire, and was organist of Notre Dame Cathedral from 1900 until his death in 1937. His "symphonies" are organ solos composed for the gigantic nineteenth-century instruments that were (and are) the glories of French cathedrals. To me, these organs and the music written for them usually sound like grandiose mush, but Vierne's music sounds better on this English recording than I have ever heard it in performance. The excellent organist David M. Patrick, the organ of Buckfast Abbey, Devon, and the recording engineers have together achieved a sonic clarity that brings out the musical values of the work and succeeds in making it listenable, believable, likable, and even rather moving.

As with almost every organ I have heard, the instrument and the music are most impressive in the softer passages. The beautiful, quiet inner movements of Vierne's work are especially wonderful on this ultra-quiet disc. As for the large symphonic sound of the outer sections, if you like Bruckner, Reger, and Franck, you'll love this. Vierne was an accomplished composer in a grand style, and his music is presented here to its best advantage. E.S.

WEBER: *Clarinet Concerto No. 1, in F Minor*. **ROSSINI:** *Theme and Variations for Clarinet and Orchestra*. **MOZART:** *Andante in C Major (K. 315)*. Richard Stoltzman (clarinet); Mostly Mozart Festival Orchestra, Alexander Schneider cond. RCA Ⓢ ARC1-4599 \$12.98, © ARE1-4599 \$12.98.

Performance: **Brilliant**
Recording: **Fine**

Richard Stoltzman is a young virtuoso who could easily bring the clarinet to the level of popularity currently enjoyed by the flute. His combination of brilliance and passion is stunning in the Weber F Minor Concerto, and his wit and humor abound in the glittering Rossini Theme and Variations. Mozart's beautiful Adagio in C Major, originally scored for flute, comes off very well indeed on the clarinet. Stoltzman has, however, perfected the long-line legato to such a degree that it obliterates the articulation, an all-important factor in eighteenth-century music. Nonetheless, he is a likable performer who brings infectious joy and enthusiasm to the music he plays, and he is well served in the accompaniment here. S.L.

WEILL: *The Seven Deadly Sins*. Elise Ross (soprano); Anthony Rolfe Johnson, Ian Caley (tenors); Michael Rippon (baritone); John Tomlinson (bass); City of Birmingham Symphony Orchestra, Simon Rattle cond. ANGEL Ⓢ DS-37981 \$12.98, © 4XS-37981 \$12.98.

Performance: **Good**
Recording: **Good**

Kurt Weill called *The Seven Deadly Sins* a *ballet chanté*. It is a modern morality play in the guise of a cantata, the last Brecht/Weill collaboration, written in Paris in 1933 after the accession of the Nazis forced both authors out of Germany. Against such a background one would have thought that these highly political creators would have voiced their outrage against their persecutors. That was not the case. It is world capitalism, as embodied in Brecht's vision of

America, that is the target of the authors' merciless sting here.

Even with Brecht's simplistic wall-poster philosophizing the text of *The Seven Deadly Sins* is fiercely effective in its attack on the world's false values. And, as usual, Weill's acerbic, openly decadent, yet frequently haunting music is the perfect vehicle for the poet's message. In my view, though, neither this nor any other Brecht/Weill creation is the major *musical* statement its fervent admirers declare it to be.

I like this new performance, however. Elise Ross, whose name is new to me, sings her music straight, without cabaret attitudes, and that enhances its appeal. Her Anna, the young woman on whom the sins

are visited, is a fate-pursued, vulnerable, and, in the end, defeated creature whose portrayal is very affecting. The four male singers form a good vocal ensemble, Greek-chorus-style, but the recording does not always give them enough clarity and prominence. The orchestra, however, is captured in sharp detail. Conductor Simon Rattle gets my compliments for playing down the music's coarse qualities, thus drawing Weill closer to the mainstream—a Mahler without bombast or a Hindemith with a vulgar streak. In sum, this is a disc that even those who do not particularly like Weill might enjoy. G.J.

(Continued on page 95)

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Jorge Oraison

Etcetera

THE new Dutch label Etcetera, distributed in the U.S. by Qualiton Imports, is described in its literature as having been "started by two music enthusiasts dedicated to exploring repertoire that deserves to be better known." The label's initial release comprises five discs and the equivalent cassettes. They are splendidly recorded, very handsomely packaged, and impeccably pressed (curiously, for a Dutch company, in Germany rather than Holland).

The album of Grieg keyboard works played by Kjell Baekkelund and Robert Levin was recorded by CBS in 1977; the other four were recorded by the well-known Dutch producer Klaas Posthuma within the last couple of years. The Elly Ameling set of Hugo Wolf songs may not seem to fit in with the idea of unexplored repertoire, but the company intends to present "aspiring young artists as well as established artists," and the presence of the very solidly established Ameling should serve to validate this ambitious young label's high standards and general seriousness of purpose. Her program is also an attractive one, including nine of the most appealing of Wolf's Goethe settings and all six of the lesser-known little songs to poems by Gottfried Keller (the Swiss writer whose tale Delius used for his opera *A Village Romeo and Juliet*). Full texts are provided in German, French, and English.

Of the lesser-known material, I was agreeably surprised by the Mario Castelnuovo-Tedesco collection, and I suspect guitar fanciers will not be the only ones to enjoy it. The composer's Second Guitar Concerto, here offered in its première recording, is a good deal less familiar than his first, Op. 99, which is available in at least four different recordings at present. This *Concerto Sereno*, as it is titled, has an unusual and intriguing format: the middle movement, marked *Sarabanda con variazioni*, is nearly as long as the two outer movements

combined and actually constitutes an elaborate suite, since each of the variations is in a specific form—*sarabanda, pavana, minuetto, giga, aria, fuga*. The final movement, by way of contrast, is a highly extroverted yet oddly genteel *Fiesta* whose theme is one of those oddly familiar-sounding, vaguely folk-flavored original tunes; triangle, castanets, tambourine, and some imaginative wind coloring provide a certain rustic flavor without ever suggesting anything like the abandon such a title might suggest. The first of the three solo pieces on the album, *Tarantella*, is by all odds the most familiar part of this package, and a splendid piece it is. The *Capriccio* and *Rondo* are less substantial but agreeable enough makeweights. Even the concerto is more agreeable than consequential, perhaps, but it is all very easy to listen to in Jorge Oraison's skillful and stylish performances.

The Grieg piano package offers the original forms of two works far more familiar to us now in their orchestral garb—if the *Old Norwegian Romance with Variations* may be said to be familiar at all. It is surely a stranger in our concert halls. The orchestral version is so much more fetching, however, that the two-piano version sounds like little more than a study or sketch awaiting more suitable treatment. Pianists Levin and Baekkelund are also a bit less tidy here than they are sharing a single keyboard in the *Norwegian Dances*. The music of the *Norwegian Dances* is much more pianistic in character, and their performance of it, greatly enhanced by the lifelike sonics, strikes me as the most generally convincing one yet recorded.

Britten's endearing *Charm of Lullabies* does not appear to have been available here since the deletion of the briefly circulated Westminster recording by Maureen Forrester. In the Etcetera recording Glenda Maurice, an American mezzo, is almost a match for Forrester except in the concluding

Nurse's Song, and the Britten folk-song arrangements also offered here come off brilliantly, as do the Barber songs. The Barber side, indeed, is a treasure; there could hardly be a more valuable collection of Barber's songs on a single side, nor is it likely that any of them could have more persuasive interpreters than Maurice and the superb pianist David Garvey.

"A Little Consort Music" by the Little Consort Amsterdam is a nice enough assortment of early pieces. The range is from the fifteenth through the mid-eighteenth century, and the instrumentation is light. Walter van Hauwe and Kees Boeke play flutes and recorders, Boeke plays the viola da gamba as well, and the Little Consort's third member, Toyohiko Satoh, plays lute and theorbo. The one extended work in the program, a fifteen-minute suite by Jacques Hotteterre for flute, gamba, and theorbo, was spoiled for me by Van Hauwe's noisy gasping for breath at the start of almost every phrase. Otherwise, the music is pleasant, if not especially memorable, and again it is enhanced more than a little by the clean, spacious recorded sound.

—Richard Freed

BARBER: *Four Songs, Op. 13; Three Songs, Op. 45; Sleep Now, Op. 10, No. 2; I Hear an Army, Op. 10, No. 3.* **BRITTEN:** *A Charm of Lullabies, Op. 41. Folk-Song Arrangements: The Salley Gardens; Come You Not from Newcastle?; The Plough Boy; O Waly, Waly, Sweet Polly Oliver.* Glenda Maurice (mezzo-soprano); David Garvey (piano). ETCETERA ETC 1002 \$10.98, © XTC 1002 \$10.98.

CASTELNUOVO-TEDESCO: *Guitar Concerto No. 2, in C Major, Op. 160 (Concerto Sereno).* Jorge Oraison (guitar); Concertgebouw Chamber Orchestra, Haarlem, Adam Gatehouse cond. *Tarantella, Op. 87, No. 1; Suite, Op. 133, No. 3, Capriccio; Rondo, Op. 129.* Jorge Oraison (guitar). ETCETERA ETC 1001 \$10.98, © XTC 1001 \$10.98.

GRIEG: *Norwegian Dances, Op. 35; Old Norwegian Romance with Variations, Op. 51.* Kjell Baekkelund, Robert Levin (pianos). ETCETERA ETC 1004 \$10.98, © XTC 1004 \$10.98.

WOLF: *Anakreons Grab; Mignon (Kennst Du das Land); Mignon I, II, III; Philine; Hockbeglückt in Deiner Liebe; Als Ich auf dem Euphrat Schiffe; Nimmer Will Ich Dich Verlieren. Alte Weisen: Sechs Gedichte von Keller.* Elly Ameling (soprano); Rudolf Jansen (piano). ETCETERA ETC 1003 \$10.98, © XTC 1003 \$10.98.

LITTLE CONSORT AMSTERDAM: *A Little Consort Music. Purcell: Dioclesian; Chaconne. Weiss: Lute Suite in D Major, Passacaille. Hotteterre: Quatrieme Suite. Guilelmus: Bassa Danza a 2. Capirola: Bassa Danza "La Spagna." Ortiz: Recercada Tercera; Recercada Quinta. Fontana: Sonata Decima. Anon.: Istampita "Aquila altera"; Bassa Danza.* Little Consort Amsterdam. ETCETERA ETC 1005 \$10.98, © XTC 1005 \$10.98.

COLLECTIONS

MARILYN HORNE: Live at La Scala. Anon.: *Chloris Sighed.* Handel: *Semele: Awake, Saturnia; Iris, hence away.* Alvarez: *La Partida.* Turina: *Farruca.* Montsalvatge: *Canción de Cuna.* Granados: *La Maja Dolorosa.* Obradors: *El Vito.* Poulenc: *Le Bestiaire.* Rossini: *Semiramide: Ah, quel giorno.* Copland: *Simple Gifts; Ching-a-Ring Chaw; Long Time Ago; At the River.* Foster: *Beautiful Dreamer; Jeanie with the Light Brown Hair.* Marilyn Horne (mezzo-soprano); Martin Katz (piano). CBS M 37819, © MT 37819, no list price.

Performance: **Imposing**
Recording: **Excellent**

Marilyn Horne gave this recital in June 1981, and the program is certainly a diverse one. Her special zest and affinity for the Spanish repertoire is enthusiastically affirmed here, and her winning combination of tonal richness and exuberance enriches the American portion of the program. I find her approach to Poulenc, however, to be overpowering in tone and understated in humor. Horne has recorded the Handel and Rossini arias before.

Am I alone in suggesting that perhaps we are treated to too many live events on records, especially when they duplicate already recorded material? Here we are also dealing with many short selections, which means lots of applause and shouts of *Brava!* On the other hand, Horne is in fine form here, and she and her excellent partner Martin Katz are framed in outstandingly vivid and resonant sound. **G.J.**

KATIA AND MARIELLE LABÈQUE: *Gladrags.* Mayerl: *Honky-tonk.* Joplin: *The Entertainer; Antoinette; Magnetic Rag; Maple Leaf Rag; Elite Syncopations; The Sreuous Life; Stop-time Rag; Bethena.* Gershwin/Donaldson: *Rialto Ripples.* Johnson: *Carolina Shout.* Katia and Marielle Labèque (pianos). ANGEL S-37980 \$9.98, © 4XS-37980 \$9.98.

Performance: **Jumps**
Recording: **Lively**

These are lively, speed-time versions of classic rag material arranged for two pianos and embellished with Baroque-jazz variations by François Jeanneau. The playing is brilliant. Unlike many European musicians, the Labèques have a first-class sense of rag-time. What they lack is lyric empathy. In the notes, John McLaughlin calls Joplin—quite rightly, I think—the first fusion composer, but, with the exception of the concert waltz *Bethena*, this is Stravinskian stop-time, not Schubertian slow-drag.

In general, no attempt is made to adhere to the composer's original directions, even where they are very clearly written out (as is the *forte* finish to *Bethena*). One piece, *Antoinette*, clearly described as a march and two-step, is grossly misintepreted as lyric, *misterioso* music! Billy Mayerl's *Honky-tonk* (subtitled *A Rhythmic Absurdity. Slow Fox Trot*), the Gershwin/Donaldson rag, and the better-known James P. Johnson *Carolina Shout* are welcome variations on the Joplin diet. The album is a tour de force, but it has little to do with my concept of this music. **E.S.**

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Lynn Goldsmith/LQ

"Will Powers"

THE secret of the mysterious **Will Powers** has at last been revealed. Powers's album "Dancing for Mental Health" was released by Island this summer after a publicity campaign designed to pique curiosity. The unknown artist refused to give interviews, stating that he was waiting for the proper time to reveal his "influential identity." Powers turns out to be rock photographer Lynn Goldsmith, whose work has appeared in this magazine and many others.

"Dancing for Mental Health," Powers/Goldsmith's debut disc as a vocalist, features eight songs she wrote in collaboration with Sting, of the Police. She produced the album as well and appears in an excellent video of one of its songs, *Adventures in Success*, which sports dazzling computer graphics. □

IT'S ABOUT TIME: Rhino Records, the oddball California label that has been running what is probably the best rock reissue series ever attempted (including Bobby Fuller, the Beau Brummels, and Ritchie Valens), has finally brought



Michael Ochs Archives/Rhino Records

Slim Harpo

forth "The Best of Slim Harpo, the Original King Bee."

Slim Harpo (real name James Moore) was one of the most original of all the post-war blues singers. His biggest hit, *Baby, Scratch My Back*, came out in 1966. His vaguely ominous, *misterioso* harmonica playing and singing have been a big influence on a lot of rock-and-rollers, including the Rolling Stones and Dave Edmunds, who covered his tunes, and the Moody Blues, who, if you can believe it, took their name from Harpo's *Moody Blues*.

Harpo's material has been hard to find lately, and this new album represents the first real retrospective of his work. I consider it one of the essential releases of 1983. *S.S.*

Joan Armatrading, who sings, composes, and plays whatever instrument crosses her path, is now performing in Australia, New Zealand, and Japan. This is the last segment of a seven-month tour that began in Europe in March and swept across North America starting in July.

Interviewed in New York this summer, Armatrading admitted that she was already



Howard Bloom Organization, Ltd.

Joan Armatrading

looking forward to "a proper rest." She still enjoys the work but wants somewhat more of a break between tours. "I just want to stay home and do a bit of gardening."

Proper rest or no, she's recording a new album, her eleventh, during the break period. Her latest, "The Key" on A&M, finally won her a mass popular audience commensurate with the praise she has gotten from critics since her recording debut in 1972. She says her new popularity "feels great."

Armatrading sings in a rich contralto without a trace of the English accent that marks her speech. Born in the West Indies, she moved to England when she was seven and says she feels totally English. But she complains that the English don't quite understand her sense of humor. *Call Me Names*, a single from "The Key," is a wry look at spouse-beating. "In America most people got [the point], that it's funny, that I'm not *condoning* wife-beating, but the reverse. In Europe they totally missed that." Released in April, "The Key" made the Top Forty on the pop charts and has been charting strongly since. *Somebody's* getting it. *P.W.*



RCA Records

Perry Como

RECORDS ON RCA: The long-standing and controversial litigation involving Colonel Tom Parker, the estate of **Elvis Presley**, and RCA Records has been resolved, leaving RCA still Presley's only record company worldwide. In the thirty years of the RCA/Presley partnership he became (and remains) the best-selling solo artist in recording history. RCA's latest Presley package, "I Was the One," is reviewed on page 104 of this issue.

A different kind of record with RCA is held by singer **Perry Como**, who has been on the label longer than any other artist in its history. This summer Como celebrated fifty years in show business, forty years on RCA, and sales of over 100 million records.

At a party in his honor the seventy-one-year-old Como, known for his easygoing style, quipped, "I thought I was dead" when he was called to the podium to accept a bronze sculpture of himself. Good wishes were sent by President Ronald Reagan, New York State Governor Mario Cuomo, and New York City Mayor Edward Koch.

A big-band vocalist in the 1930's, Como became a star on radio, movies, and records in the 1940's and on television in the 1950's and 1960's. He has remained an enormously popular entertainer, releasing hit records and selling out clubs and concert halls through the 1970's and into the 1980's. It should come as no surprise that his latest disc, "So It Is," has been issued by RCA Records. □

ONE of the founding fathers of rock back in the 1950's, **Fats Domino** is no longer very active in music. Contenting himself with an occasional appearance at a nostalgia concert, he spends most of his time taking care of his New Orleans real-estate holdings.

But Domino's *Blueberry Hill* still turns up on TV's *Happy Days*, and his music also lives on in some less likely places. For example, Representative Barney Frank, Democrat of Massachusetts, is using a Domino song in a pitch to cover the \$80,000 cam-

paign debt he ran up last year in defeating Representative Margaret Heckler.

In a fund-raising letter to his constituents, Frank suggests they sing new words he has provided for an old Domino tune. The song is Domino's 1956 hit *I'm in Love Again*, which is revised as *I'm in Debt Again*. It builds to the climactic line: "You get a tax credit if you give to me." S.S.

"TOO TOUGH," Angela Bofill's latest album, reviewed here in June's "Best of the Month," has yielded two hot singles, the title tune and *Tonight I Give In*. Winding up her current tour, Bofill will include material from "Too Tough" in her shows in Atlanta on September 3, Hartford, Connecticut, on September 9, Philadelphia on September 10, and New York City on September 17. □

MUSIC affects our lives in many ways, but it hasn't often influenced the actual cut of our clothes. Recognizing



the widespread popularity of small personal portable cassette players, however, RPM Fashions is marketing the **RPM Soundman**, a stone-washed denim jacket intended specifically for men and women who use such tape equipment. The jacket's left front pocket is designed to hold the player and headset; the right pocket will hold up to three cassettes. Other features include zip-off sleeves to turn the jacket into a vest.

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berger's, Macy's, and A&S in New York City and its environs and in such other stores as Marshall Field in Chicago, Foley's in Houston, Sanger-Harris in Dallas, Dayton's in Minneapolis, Burdine's in Miami, and the May Company on the West Coast. For the name of the store nearest you, write RPM Fashions, Empire State Building, 350 Fifth Avenue, Room 350, New York, N.Y. 10118.

And if you need guidance on finding the best player to put in the left pocket, consult the article on page 69. □

Disc and Tape Reviews

By CHRIS ALBERTSON • PHYL GARLAND • ALANNA NASH • MARK PEEL
PETER REILLY • STEVE SIMELS • JOEL VANCE

THE B-52'S: *Whammy!* The B-52's (vocals and instrumentals). *Legal Tender; Whammy Kiss; Song for a Future Generation; Butterbean; Trism;* and four others. WARNER BROS. 23819-1 \$8.98, © 23819-4 \$8.98.

Performance: **Personality crisis**
Recording: **Crisp**

The five young people from Athens, Georgia, known as the B-52's may be a novelty act, but there's been something irresistibly appealing about their cosmic surf music in the past. Consequently, I'm a little disappointed with where this new record finds them heading, although the writing was already on the wall after their previous EP with David Byrne of Talking Heads. In its lyrics, at least, "Whammy" is still recogniz-

ably the B-52's: as usual, they are silly, campy assemblages from the detritus of American pop culture (can you think of any previous New Wave album where the performers announce their astrological signs?). Musically, however, this is dire, faceless electro-pop dance rock without the eerie Appalachian echoes that originally informed the B-52's' sound. I find that sad, because what the world emphatically does not need at this point is another band peddling faceless electro-pop dance rock—unless, of course, by "the world" you mean the people who program MTV. S.S.

JOE "KING" CARRASCO AND THE CROWNS: *Party Weekend.* Joe "King" Carrasco and the Crowns (vocals and instrumentals). *Let's Go; Dance Republic; Tears Been A-Falling; Perfect Spot; Burnin' It Down; Get Off;* and six others. MCA MCA-5404 \$7.98, © MCAC-5404 \$7.98.

Performance: **Good**
Recording: **Good**

Joe "King" Carrasco plays the Tex-Mex border-style music made famous by Buddy Holly and later carried on by the Sir Douglas Quintet. This is a straightforward dance album by a highly competent and deliberately primitive bar band. At times Carrasco

mildly parodies Tex-Mex, and he also kids about the terrible album cover designs of the 1950's. He wrote all the material with his associate Johnny Perez, his producer Richard Gottehrer, bassist Brad Kizer, and other folks. "Party Weekend" has twelve selections (rare on U.S. albums), all the tunes as sprightly as they are silly, so you really get your money's worth. J.V.

MARSHALL CRENSHAW: *Field Day.* Marshall Crenshaw (vocals, guitar); Chris Donato (bass); Robert Crenshaw (drums). *Whenever You're on My Mind; Our Town; One More Reason; Try; One Day with You; For Her Love;* and four others. WARNER BROS. 23873-1 \$8.98, © 23873-4 \$8.98.

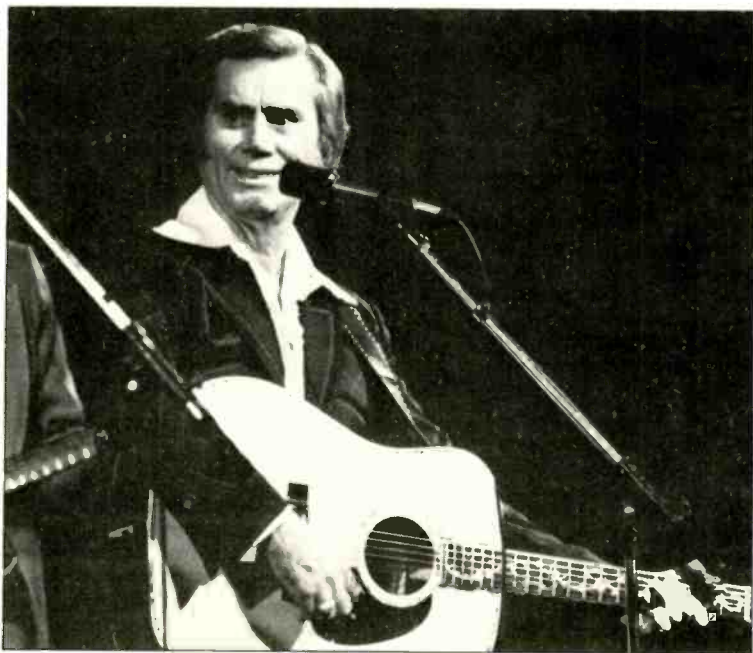
Performance: **Disappointing**
Recording: **Good**

What I think we've got here is a serious case of sophomore slump. This is not a dishonest record—Marshall Crenshaw is far too conscientious a craftsman to pander to somebody's idea of what's suitable for radio play—but it is kind of dull, and that's almost shocking after the excitement of his previous release. Of course, there are beguiling songs scattered here and there (*Whenever You're on My Mind*, the single, is a wonderful summer car-radio ditty), but even the best ones can't touch the stuff on

Explanation of symbols:

- = digital-master analog LP
- Ⓢ = stereo cassette
- Ⓢ = digital Compact Disc
- Ⓢ = eight-track stereo cartridge
- Ⓢ = direct-to-disc recording
- Ⓢ = monophonic recording

The first listing is the one reviewed; other formats, if available, follow it.



Melody Gimpel/Epic Records

The Life and Art of George Jones

COUNTRY-MUSIC journalist Jack Hurst once said that George Jones might prove to be "the Last Country Singer . . . the last poor boy to give traditional country music everything he has in him." Some folks will disagree, but I'll lay odds it won't be many, because for Jones life and art are virtually inseparable. In an interview several years ago, I asked him about his widely publicized personal problems: "Well," he said, "I'm just weak. We've all got our weaknesses, but some of us can cope with 'em a lot easier than others. I don't know how to explain it."

He explains it best, actually, in his music, and even if you didn't know about all he's been through, you'd know from hearing "Shine On," his first solo album in two years, that George Jones is an eternally troubled individual. Often called the greatest honky-tonk singer of all time, Jones sounds best coming through a throbbing jukebox speaker. The quarter drops, and out comes the Voice of Despair, anxious at first, then desperate. He holds onto the cry as he might the last bottle on earth. When you talk about pain and suffering, George Jones has *been* there.

On "Shine On," though, Jones also sounds as if a new layer of skin had grown over the old wounds. It doesn't mean he's any less sensitive, only a little less tortured than usual. But his artistry is still there, and, despite all the self-flagellation, so is his remarkable voice, his instrument for wringing every ounce of meaning from a lyric. Four of the ten songs here have been kicked around by various artists before, and one of them, *Almost Persuaded*, is nearly old

enough to cash in an IRA. Yet Jones sings each one as if it's totally new, delivering the lyrics with a freshness and intensity that suggest he's *lived* it. Chances are, he has.

But experience isn't all that goes into Jones's performances. As Emmylou Harris says, he "takes a song and makes it into a work of art—always." Nowhere on "Shine On" is that artistry more apparent than on the exceptional song *I Always Get Lucky with You* by Merle Haggard. Play Haggard's and Jones's versions back to back, and you'll be astonished at the difference in mood. Haggard merely sounds happy about it all, but Jones sounds as if the woman in question had saved his very soul and that he's simply going to burst if he doesn't tell her about it right now. As anxious as he may be to get his message across, though, he takes the time to do it right.

Even if "Shine On" isn't the total masterpiece Jones fans have been waiting for, it's chock-full of fine performances. And even if we've heard too many of the songs before, Jones sings them as no one else does. If you're going to buy only a couple of country albums this year, think about getting this one. —Alanna Nash

GEORGE JONES: *Shine On*. George Jones (vocals); vocal and instrumental accompaniment. *Shine On (Shine All Your Sweet Love on Me); She Hung the Moon; I'd Rather Have What We Had; Tennessee Whiskey; Almost Persuaded; I Always Get Lucky with You; Memry'ville; I Should've Called; The Show's Almost Over; Ol' George Stopped Drinkin' Today.* EPIC FE 38406, © FET 38406, no list price.

Crenshaw's debut LP, and the overall tone of the material on "Field Day" is strangely glum and morose.

Steve Lillywhite's production should have given Marshall and his splendid band the kind of sonic depth that could compensate for the relative thinness of the new material, but it has just the opposite effect: I was struck by how overdressed everything here seemed. Instead of hearing songs, I found myself admiring drum sounds, rather like Milton Berle's joke about walking out of a Broadway musical humming the costumes and the scenery. I suppose the cliché that most artists have a lifetime to write a first album and six months to do the follow-up could explain the less than scintillating music of "Field Day." Then again, maybe Crenshaw's just been depressed lately. Whatever the reason, I give this one no more than a B-minus. S.S.

RECORDING OF SPECIAL MERIT

DAVE EDMUNDS: *Information*. Dave Edmunds (vocals, guitar); instrumental accompaniment. *Slipping Away; Don't You Double; I Want You Bad; The Watch on My Wrist;* and six others. COLUMBIA FC 38651, © FCT 38651, no list price.

Performance: **Instant party**

Recording: **Dense**

Ah yes, another year, another serenely entertaining Dave Edmunds album. The big news here—and the big departures from what one thinks of as Edmunds's style—are the two tracks produced by Jeff Lynne. Imagine Gene Vincent fronting the Electric Light Orchestra, and you'll have an inkling of what they sound like—apart from terrific. The rest of the record, except for a shrewd cover version of *Wait*, an obscure J. Geils tune that's bluesier than Edmunds usually gets, is the by-now familiar Edmunds mix of pop styles in a time warp somewhere between Presley and the Beatles, all served up with good humor, melodic grace, and deft production touches. This is not exactly a groundbreaking album; Edmunds is a craftsman, and his music is designed mostly to amuse. But in the current pop climate, we're fortunate to have such an amusing arch-conservative around. S.S.

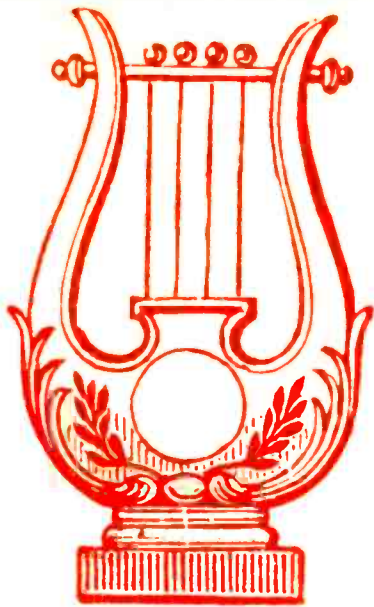
BILLY FIELD: *Bad Habits*. Billy Field (vocals, piano); vocal and instrumental accompaniment. *Bad Habits; Baby I'm Easy; Never Be Blue; Celebrity Love; Good Golly Me;* and five others. ELEKTRA 60190-1 \$8.98, © 60190-4 \$8.98.

Performance: **Old-fashioned fun**

Recording: **Good**

From the show-biz wilds of Australia comes Billy Field with a collection of his and Tom Price's songs that he performs with a lot of old-fashioned verve. The overall sound is that of the big bands of the late Thirties and early Forties with a big, rolling, skipping beat. Field sings in a jaunty bray that summons up memories of both Louis Armstrong and—are you ready?—Louis Prima. It all begins to wear a bit thin after three or four cuts, but there is a considerable amount of fun to be had here, especially in the title song. P.R.

(Continued on page 101)



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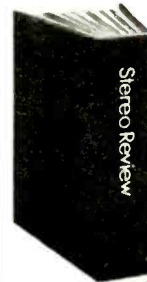


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FLOCK OF SEAGULLS: Listen. Flock of Seagulls (vocals and instrumentals). *Wishing (If I Had a Photograph of You)*; *Nightmares*; *Transfer Affection*; *What Am I Supposed to Do*; and six others. JIVE/ARISTA JL8-8013 \$8.98, © JC8-8013 \$8.98.

Performance: **Uneven**
Recording: **Pretty good**

Flock of Seagulls had two of the biggest dance-club hits of 1982, *I Ran* and *Modern Love Is Automatic*, as well as what had to be the most inane rock video. The keys to their success were simple: slick electronics, a lightning pace, and the stinging guitar of Paul Reynolds. When the group's new album, "Listen," sticks to that formula, the results are, frankly, irresistible. Reynolds is at his best on *Electrics* and *The Traveller*, slicing through a wall of distortion-laced rhythms with electrifying chords and crackling harmonics. But for most of "Listen" the Seagulls make the mistake of emphasizing Mike Score's vocals and relegating Reynolds to a chunking, repetitive background. Score sings with the predictable anxiety that is synth-pop's signature—just the thing, unfortunately, to make the drab lyrics of these songs seem even drabber. Consequently, only about half of "Listen" is worth listening to. **M.P.**

RECORDING OF SPECIAL MERIT

PETER GABRIEL: Plays Live. Peter Gabriel (vocals, synthesizers); vocal and instrumental accompaniment. *The Rhythm*

of the Heat; *I Have the Touch*; *Not One of Us*; *D.I.Y.*; *San Jacinto*; *No Self Control*; *Bika*; and nine others. GEFEN 2GHS 4012 F two discs \$13.98, © 2G5 4012 \$13.98.

Performance: **Excellent**
Recording: **Excellent remote**

"Plays Live" enlarges Peter Gabriel's reputation as an electrifying stage performer, a matter of gospel to his fans but rather surprising when you consider the nature of the music he makes. Its subtle lyrics and pace would appear to be too reflective to work easily with an audience of thousands, many of them hundreds of feet from the source of the sound. There is little flamboyance (except for the grease paint and stage show), no hackneyed histrionics. Yet Gabriel projects a strong persona, developed during his career with Genesis and through three solo albums. That helps focus the audience's attention on his often-difficult material, much of it taken from his most recent—and most sophisticated—album, "Security."

How does he do it? For one thing, he articulates. You don't have to know these songs already to understand them. And, as "Plays Live" amply demonstrates, Gabriel's execution is painstaking. Despite the generally slow tempos, the music relies chiefly on intricately arranged percussion. The backing is more like a drum band than a rock band, with Larry Fast's synthesizers, Tony Levin's bass, and David Rhodes's guitars pounding out a polyrhythmic web of sound rather than delineating clear melodic lines.

"Plays Live" works as a continuous album, not simply a review of Gabriel's smash hits (*Games Without Frontiers* is notably missing). Even the crowd pleasers like *Shock the Monkey* and *Solsbury Hill* fit into the cerebral overall pattern. As a unified performance, it builds to some powerful, yet often quiet, climaxes, as in the chilling *Family Snapshot*. It also drags in places—*The Family and the Fishing Net*, *Intruder*, and *I Go Swimming*, all on side two, seem to go on for months. But most of "Plays Live" overwhelmingly confirms the conventional wisdom that Peter Gabriel is a great live performer. **M.P.**

RECORDING OF SPECIAL MERIT

HEAVEN 17: Luxury Gap. Heaven 17 (vocals and instrumentals); vocal and instrumental accompaniment. *Crushed by the Wheels of Industry*; *We Live So Fast*; *Let's All Make a Bomb*; *Key to the World*; *Temptation*; *Come Live with Me*; and three others. ARISTA AL8-8020 \$8.98, © AC8-8020 \$8.98.

Performance: **Enlightened**
Recording: **Good**

Disco with a social conscience? That's the unlikely combination Heaven 17 has come up with on "Luxury Gap." Actually, there were hints of it on the group's first album, in the song *We Don't Need No Fascist Groove Thang*, but those hints have grown here into a full-blown disco diatribe. Blending racing synthesizer rhythms (the speed

Please remain seated for this performance.

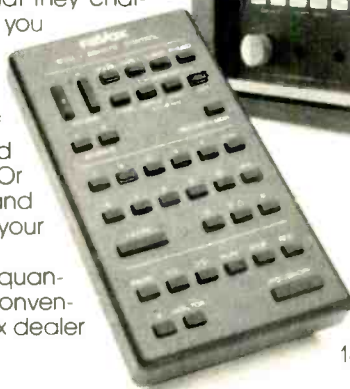
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Lynn Goldsmith/LGI

The Police: left to right, Sting, Andy Summers, Stewart Copeland

The Police's "Synchronicity"

THE latest album from the Police, "Synchronicity" on A&M, is Sting's *Second Coming*. Like Yeats's famous poem, it is an arresting, terrifying, and totally convincing view of things falling apart. And it is a masterwork.

Synchronicity (it's a Jungian concept) refers to coincidences that may not be coincidental, simultaneous occurrences that seem to make a meaningful pattern. In *Synchronicity I*, the opening cut of the Police's album, Sting recites a litany of synchronous pairs: "a star fall, a phone call; a dream dance, a shared romance . . ." The next song, *Walking in Your Footsteps*, uses a familiar symbol of extinction, the dinosaur, to suggest where mankind may be headed. Accompanied only by drum, flute, and Andy Summers's eerily drifting guitar, Sting's vocal rises from a quizzical chant in the middle register in the first two verses to a high-pitched, frightened plea: "Hey Mister Brontosaurus, do you have a lesson for us?/If we drop the atom bomb, will they say that we were dumb?"

Synchronicity II, at the end of the first side has a superficial musical similarity to *Synchronicity I*, with both being built on the relentlessly driving beat of Stewart Copeland's drumming, Sting's surging bass, and Summers's dense, ringing guitar chords. The final line of each verse evokes the terrifying spectre of the slow progress onto land of a creature from the dark bottom of a Scottish lake. Yeats's "rough beast/slouching toward Bethlehem"? The meaning is clear: man's time is up.

The theme of collapse is at work in more specific ways elsewhere on the album. *Every Breath You Take* is a chilling depiction of jealous obsession, *King of Pain* a

portrait of the artist in the aftermath of his own collapse.

If all this sounds like heavy going, it really isn't, because the center of the album holds. "Synchronicity" is as brilliant musically as it is intellectually. A modified reggae beat has become not merely the Police's signature but their pulse. No one is more responsible for the Police's sound than Copeland. There may be a more technically accomplished rock drummer somewhere, but none other I can think of so thoroughly defines and drives a group's music. And, sex symbol or not, Sting is as expressive and versatile a vocalist as we have in pop music. You could strip the Police down to just Copeland's drumming and Sting's singing, and it would still be compelling music.

One caveat: be prepared for *Mother*, the lone contribution by Andy Summers. Almost surely written during his collaboration with Robert Fripp on "I Advance Masked," its Wild Man Fisher sixteen-bar-blues vocals and Indian-raga tape-loop guitar line are totally out of sync with the rest of the album. This cut and Copeland's *Miss Gradenko* do, however, provide some critically needed comic relief.

If you need any more convincing that "Synchronicity" is one of the most important rock albums of 1983, perhaps I should get into another line of work. —Mark Peel

THE POLICE: *Synchronicity*. The Police (vocals and instrumentals). *Synchronicity I*; *Walking in Your Footsteps*; *O My God*; *Mother*; *Miss Gradenko*; *Synchronicity II*; *Every Breath You Take*; *King of Pain*; *Wrapped Around Your Finger*; *Tea in the Sahara*. A&M SP-3735 \$8.98, © CS-3735 \$8.98.

may cause your speakers to hyperventilate), layers of slapping electronic percussion, and blue-eyed-funk vocal harmonies that suggest Hall and Oates, Heaven 17 now makes it possible to dance to some of today's most pressing social issues: the enslavement of labor (*Crushed by the Wheels of Industry*), the killing pace of modern urban life (*We Live So Fast*), the absurdity of living under the threat of nuclear war (*Let's All Make a Bomb*), and the decadence of our credit-card culture (*Key to the World*). As far as I'm concerned, it's an idea whose time has come: a synth-band with its heart—and not just its beat—in the right place. M.P.

ELTON JOHN: *Too Low for Zero*. Elton John (vocals, keyboards); Davey Johnstone (guitars, vocals); Dee Murray (bass, vocals); Nigel Olsson (drums, vocals); vocal and instrumental accompaniment. *Cold As Christmas (in the middle of the year)*; *I'm Still Standing*; *Too Low for Zero*; *Religion*; *I Guess That's Why They Call It the Blues*; and five others. GEFEN GHS 4006 \$8.98, © M5G 4006 \$8.98.

Performance: **The usual**
Recording: **Excellent**

Elton John and Bernie Taupin, the Abbot and Costello of rock, are back with "Too Low for Zero," and their return is a gentle reminder of why it was so easy to let them go in the first place. It's a lavishly arranged and produced album of self-satisfied, tepid rock. The opening track, *Cold As Christmas* (a song about the breakup of a marriage and family), reminds us that Elton and Bernie—and all of us who grew up listening to *Goodbye Yellow Brick Road* and *Saturday Night's All Right for Fighting*—are getting older, but the rest of the album makes it clear that older isn't necessarily wiser. One thing that does come with age, though, is an increasing impatience with little annoyances we once could overlook. Like the way Elton swallows the last syllable of every word. Or the way Bernie writes knowing winks and elbow jabs into his lyrics ("I guess that's why they call it the blues") that don't really mean anything.

Admittedly, "Too Low for Zero" would be a lot easier for me to take—after all, the worst you can say about it is that it's stodgy—if I didn't have this mental picture of the artist as a buffoon in garbage-can sized glasses and a canary suit. And, give Elton and Bernie credit, they always come up with at least one fine song. Here it's *One More Arrow*, a genuinely touching remembrance of a departed friend. It's almost enough to make me forget the yellow feathers and sequined top hat. Almost. M.P.

RECORDING OF SPECIAL MERIT

NRBQ: *Grooves in Orbit*. NRBQ (vocals and instrumentals); the Whole Wheat Horns (instrumentals). *Smackaroo*; *Rain at the Drive-In*; *How Can I Make You Love Me*; *When Things Was Cheap*; *A Girl Like That*; *My Girlfriend's Pretty*; *I Like That Girl*; and four others. BEARSVILLE 23817-1 \$8.98, © 23817-4 \$8.98.

Performance: **Excellent**
Recording: **Good**

Oh, I do love a good-time band. And I've never been disappointed in an NRBQ al-

bum. Before I listened to this latest outing I wondered what goofy tune they would choose for their traditional live cut, recorded in a club with the Whole Wheat Horns. This time it's *Daddy-O*, about a guy who staggers home blitzed with apples and peaches and kisses. Lately there has also been one "serious" song on each NRBQ album, and here it is *When Things Was Cheap*, which appears to be a list of suspicions about the President. Among the other songs are a remake of Johnny Cash's early rocker *Get Rhythm* (also on their "Live at Yankee Stadium" album), two "silly" songs, *Rain at the Drive-In* and *My Girlfriend's Pretty*, another more serious one, *A Girl Like That*, and such throwaways as *Hit the Hay* and *12 Bar Blues*.

The endearing thing about NRBQ is that they're out to have a good time, and they know their stuff. Only a confident and secure band can appear to be as casual as this one is or to skirt the edge of sloppiness with such fine and hilarious disdain. These guys are the Monty Pythons of rock. J.V.

RECORDING OF SPECIAL MERIT

DOLLY PARTON: *Burlap and Satin*. Dolly Parton (vocals); vocal and instrumental accompaniment. *Ooo-Eee; Send Me the Pillow You Dream On; Jealous Heart; A Gamble Either Way; Appalachian Memories; I Really Don't Want to Know; Potential New Boyfriend*; and three others. RCA AHL1-4691 \$8.98, © AHK1-4691 \$8.98.

Performance: **Excellent**

Recording: **Good**

No matter what you might think of the music Dolly Parton has chosen to sing through the years, you have to admit that she's turned in consistently strong performances. When it comes to *singing*, Dolly's vocal twirls and swirls rank with the best of them. And when it comes to *expression*, to communicating what a song is all about, I dare you to find another white female singer alive who can sell a song with such pure, unadulterated soul.

Generally, that's held true even when the songs themselves weren't anything to get excited about, as on Parton's last album, "Heartbreak Express," and on her new one, "Burlap and Satin." There are some stand-outs on the latter, to be sure: the scorching disco hit *Potential New Boyfriend*, her own terribly moving *Appalachian Memories*, and the plaintive *A Cowboy's Ways*.

Mainly, though, "Burlap and Satin" is about communication—about feelings, not about songs or even music. "Dollycologists," as the late Noel Coppage called us, are likely to think every song sounds as if it had come from a previous album. But if Dolly isn't making many great strides here, at least she's still holding our attention. It isn't the great album I hoped it would be, mainly because most of the songs—including *I Really Don't Want to Know*, her new duet with Willie Nelson—could be a lot stronger. Of her six originals here, only a couple stick with you. But anyone who has the sensitivity to write a song like *Appalachian Memories*, which distills all the power and pathos of John Steinbeck's *The Grapes of Wrath* into just over four minutes, should be capable of producing an album that would set new standards for this



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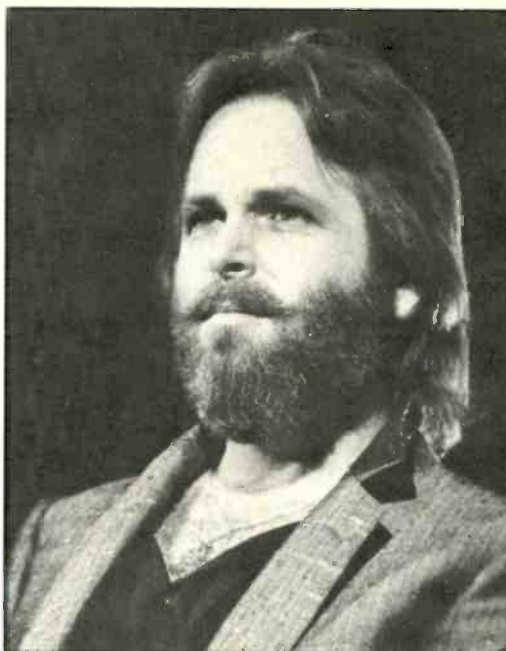
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genre of country-pop. While you're waiting for Dolly to come up with that one, "Burlap and Satin" isn't a bad way to spend the time. *A.N.*

RECORDING OF SPECIAL MERIT

JUNE POINTER: *Baby Sister*. June Pointer (vocals); vocal and instrumental accompaniment. *Ready for Some Action; I Will Understand; To You, My Love; New Love, True Love;* and five others. RCA BXL1-4508 \$8.98, © B XK1-4508 \$8.98.

Performance: **Sizzling**

Recording: **Good**

The Pointer Sisters made their debut approximately ten years ago with an album they have yet to surpass. I've lost track of the various comings and goings of members of the group, but I'm delighted to report that some of the fire and sassiness that first propelled them into the spotlight can be found in this new solo album by "Baby Sister" June Pointer. She has an ambitiously hard-edged tone that cuts through the background sound and commands immediate attention on the opening *Ready for Some Action*, which she definitely is. When she belts out *I'm Ready for Love*, she sounds like a Diana Ross gone wild in an arrangement that is an almost humorous take-off on the old Motown sound. June Pointer's distinctive personality shines through it all. This is a singer who refuses to be ignored, and I don't think she will be. *P.G.*

RECORDING OF SPECIAL MERIT

ELVIS PRESLEY: *I Was the One*. Elvis Presley (vocals, guitar); vocal and instrumental accompaniment. *My Baby Left Me; (You're So Square) Baby I Don't Care; Little Sister; Don't; Wear My Ring Around Your Neck; Paralyzed; Baby Let's Play House;* and four others. RCA AHL1-4678 \$8.98, © AHK1-4678 \$8.98.

Performance: **Incendiary**

Recording: **Good for the period**

Oddly enough, this is the first intelligent Presley repackaging that American RCA

I ALWAYS thought that the Beach Boys were overrated, then and now, but Carl Wilson's new solo album, "Youngblood," is a delightful surprise. For straight-ahead entertainment, solid writing and singing, instrumental support, and production (by Jeff Baxter), this is as good as pop gets.

Wilson wrote the music for seven of the cuts, with lyrics by Myrna Smith-Schilling. He sings with the ease that comes of his twenty years' experience with the Beach Boys. But there is a new exuberance behind his vocals, a feeling of release—you can almost hear him saying, "I don't have to go clumping around the country singing that golden-oldie stuff." The collaborations between Wilson and Smith-Schilling display craftsmanship and good construction, and three of them are outstanding: *What More Can I Say?*, *She's Mine*, and *Givin' You*

Up. Lieber and Stoller's classic *Young Blood* is done as an affectionate joke, but John Fogerty's *Rockin' All Over the World* means business. *What You Do to Me* by John and Johanna Hall gets the Beach Boys' layered background-vocal treatment, and Wilson turns in a no-nonsense vocal on Billy Hinche's *One More Night Alone*.

"Youngblood" is a splendid piece of work. Don't miss it. —*Joel Vance*

CARL WILSON: *Youngblood*. Carl Wilson (vocals, guitar); vocal and instrumental accompaniment. *What More Can I Say?; She's Mine; Givin' You Up; What You Do to Me; Time; Rockin' All Over the World; One More Night Alone; Young Blood; Of the Times; Too Early to Tell; If I Could Talk to Love.* CARIBOU BFZ 37970, © BZT 37970, no list price.



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has ever come up with. It will show all the Stray Cats fans out there where the boys cribbed their style from. "I Was the One" contains most of Presley's best rockabilly songs, neatly sequenced and without the fake-stereo reprocessing that has marred too many earlier Presley reissues. Instead, the original Presley tracks were remixed with instrumentals newly recorded in stereo by mostly the same musicians Presley first recorded with. For this release they copied their old performances exactly, even down to the mistakes. It's great stuff.

It's fashionable these days to dismiss Presley as a sort of *idiot savant*, a not-too-bright guy who just happened to be in the right place at the right time. Happily, this

record shows that to be a whopper of a lie; the *authority* of these performances speaks volumes. This is timeless rock-and-roll. S.S.

MARTY ROBBINS: *Some Memories Just Won't Die*. Marty Robbins (vocals); vocal and instrumental accompaniment. *Some Memories Just Won't Die*; *Change of Heart*; *Angelina*; *I Miss You the Most*; *Honkytonk Man*; and five others. COLUMBIA FC 38603, © FCT 38603, no list price.

Performance: **Fluid as ever**
Recording: **Sweet**

In the days just prior to his death, Marty Robbins went into the studio with producer Bob Montgomery and recorded eight sides.

Most of them were love ballads, and all of them were filler. To come up with enough tracks for an album, Columbia reprised the aptly titled *Some Memories Just Won't Die* from Robbins's last album (also produced by Montgomery) and borrowed *Honkytonk Man* from the previously released movie soundtrack. The tacked-on tunes are grabbers, both of them, but the rest is dreck—well-sung dreck, but dreck just the same. While I've never been a fan of Snuff Garrett's production, the sparse, lean *Honkytonk Man* shows that he really knew the best way to present Marty Robbins. A.N.

RICK SPRINGFIELD: *Living in Oz*. Rick Springfield (vocals, guitar); vocal and instrumental accompaniment. *Me & Johnny*; *Human Touch*; *Alyson*; *I Can't Stop Hurting You*; and six others. RCA AFL1-4660 \$8.98, © AFK1-4660 \$8.98.

Performance: **Loud**
Recording: **Thick**

Rick Springfield started off as a rocker in Australia and came to the U.S. to pursue fame. After some nasty bumps in the record business he became a successful TV actor, but music remains his preferred profession. His first hit album, "Working Class Dog" (the single was *Jessie's Girl*), was enjoyable and revealed that he had a sense of humor. His second album, "Success Hasn't Spoiled Me Yet," contained less humor, and this, his third, is simply gaudy and noisy. The few traces of humor are unpleasantly cynical and are smothered in the over-recorded noise of power-pop.

On the evidence of *Me & Johnny*, about his years in Australia yearning to be a pop idol, I suspect that Springfield doesn't want to be a rock musician as much as he wants to be a rock star. If that's so, he'll keep on making dead albums. Springfield is a sometime musician who's at his best when he doesn't try too hard. J.V.

RECORDING OF SPECIAL MERIT

BETTY WRIGHT: *Back at You*. Betty Wright (vocals); vocal and instrumental accompaniment. *Burning Desire*; *She's Older Now*; *Be Your Friend*; *I Promise You*; *Live, Love, Rejoice*; and four others. EPIC FE 38558, © FET 38558, no list price.

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

Marlon Jackson, who produced this record, is evidently trying to nose his way up through the cloud of glitter left behind by brother Michael as he took off for the outer limits of superstardom. Marlon's effort here is powered by Betty Wright, who sings these mostly reggae-flavored compositions with lusty vigor. The soul-reggae mix is a winning one, and the ingredients mesh properly. Although the lyrics lack the power and meaning that lie at the heart of reggae, everybody seems to have a good time with the music. The best moments come on *Reggae the Night Away*, which is as good a dance number as you're likely to hear this year, and *Be Your Friend*, which is played lowdown and funky. It works quite nicely, I think, and brings a welcome breath of fresh air to the soul front. P.G.

(Continued on page 108)



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JAZZ



NAT ADDERLEY: *On the Move*. Nat Adderley (cornet); Sonny Fortune (alto saxophone); Larry Willis (piano); Walter Booker (bass); Jimmy Cobb (drums). *Malandro; The Little Boy with the Sad Eyes; Naturally;* and two others. **THEATER TR 117 \$8.98.**

Performance: **Cooking**
Recording: **Good remote**

Nat Adderley never achieved the popularity of his late brother, Julian "Cannonball" Adderley, but he had a great deal to do with the success of the Cannonball Adderley Quintet in the early Sixties. Not only did he share the front line with his brother, adding solid brass to sinewy reed, but he contributed such popular tunes to the group's repertoire as *Work Song, That's Right!*, and *The Old Country*. Nat also frequently recorded under his own name, and when Cannonball died in 1975, many people thought he would take over the quintet. His decision not to do so seemed a wise one at the time,

but Nat Adderley never moved very far from the turf he used to share with his brother.

While the spirit of the old Cannonball Adderley group is kept very much alive in "On the Move," by a Nat Adderley Quintet of identical instrumentation, it is probably unfair to make a comparison between the two bands. Cannonball's group made a stronger impression because it provided blessed relief from the day's unimaginative one-note-piano rock-and-roll, and its soulful struts counteracted the cool breezes of West Coast jazz that some fans found too frosty. Nat Adderley's group has a well-worn sound, but the music is well executed—listening to it is a little like watching a good movie remake featuring one member of the original cast. **C.A.**

RECORDING OF SPECIAL MERIT

ROSEMARY CLOONEY: *The Music of Harold Arlen*. Rosemary Clooney (vocals); Scott Hamilton (tenor saxophone); Warren Vaché (cornet); Dave McKenna (piano); Ed Bickert (guitar); Steve Wallace (bass); Jake Hanna (drums). *Happiness Is a Thing Called Joe; Get Happy; Ding Dong the Witch Is Dead; Out of This World; My Shining Hour;* and four others. **CONCORD JAZZ CJ-210 \$8.98.**

Performance: **Excellent**
Recording: **Excellent**

Rosemary Clooney as a jazz singer (or, as she describes herself, "a band singer") has a

mastery of understatement that belies her skill. Listening to this album reminded me of one of those John Wayne Westerns where the Duke is assembling a group of first-raters to go out on an adventure. One of the applicants performs some stupendous feat of marksmanship and is accepted with Wayne's laconic, "You'll do."

Oh, boy, does this lady know her stuff! Clooney's tone, inflection, and interpretation are all impressive, but above all she communicates the feeling that she enjoys the opportunity to sing golden material like Arlen's. The crucial test for me was *One for My Baby* and *Stormy Weather*—great songs, I know, but done to death. Her versions of them are the best that anyone is going to hear for quite a long time.

Arlen had several glittering lyricists—Johnny Mercer, "Yip" Harburg, and Ted Koehler—but my favorite on this album is Leo Rubin's hilarious lyric for *Hooray for Love*. Clooney has a rousing time with it. She's nobly supported by a group of the Concord Jazz regulars (Scott Hamilton, Dave McKenna, Jake Hanna) aided by Warren Vaché's cozy cornet and newcomer Ed Bickert's charging guitar. They are a band worthy of a very worthy "band singer." She'll do. **J.V.**

RECORDING OF SPECIAL MERIT

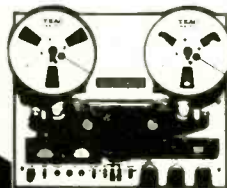
GIL EVANS: *Priestess*. Gil Evans (piano); Lew Soloff (trumpet); David Sanborn, Arthur Blythe (alto saxophone); George Adams (tenor saxophone); other musicians.

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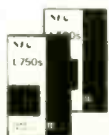
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Performance: **Grand**
Recording: **Good remote**

Listening to "Priestess," just released but recorded in 1977, it is hard to believe that Gil Evans, whose music is so thoroughly in the present, celebrated his seventieth birthday last year. Evans is best known for his collaborations with Miles Davis in the late Forties and Fifties; there is talk of another reunion in this decade, but only time will tell if it can produce anything approaching the magic of their "Sketches of Spain," "Miles Ahead," and "Porgy and Bess" albums. Both men have altered their musical courses, and while Davis now seems to be floundering, Evans remains on an even keel. His musical thinking is as grand and advanced as ever, and he has moved into the electronic age to incorporate that king of plugged-in instruments, the synthesizer. On "Priestess," Evans uses this tool, played by Pete Levin, prominently but unobtrusively as a springboard for his soloists.

Old musical associations never die, they just fade into new charts; at least, that is the feeling I get from Billy Harper's title track here, which fills the first side. It bears more than a casual resemblance to the sounds generated by Miles Davis after his Fillmore transformation, but the Evans stamp is still unmistakable. There are rough edges on Arthur Blythe's solo, but this robust piece was built to take such treatment. One can also marvel at the three tracks on the sec-

ond side, especially Evans's arrangement of Charles Mingus's *Orange Was the Color of Her Dress Then Silk Blue*, which, though unmistakably Evansian, beautifully retains the character of the composer. C.A.

RECORDING OF SPECIAL MERIT

HELEN FORREST: *Now and Forever*. Helen Forrest (vocals); Hank Jones (piano); George Duvivier (bass); Grady Tate (drums); Bob Zottola (trumpet, flugelhorn); Clint Sharman (trombone); Frank Wess (saxophone, flute). *You'll Never Know; I Had the Craziest Dream; But Not for Me*; and six others. STASH ST 225 \$8.98 (plus \$1 postage and handling charge from Stash Records, P.O. Box 390, Brooklyn, N.Y. 11215).

Performance: **Excellent**
Recording: **Good**

"Now and Forever" marks the return to recording of Helen Forrest, who retired from the music scene in the early Sixties to marry. If you want to know who she was, what she meant in pop, and why you should hear this record, then I suggest that you read Chris Albertson's graceful and witty liner notes. If you want to revel in fine pop singing, just listen to Forrest as she swings through this collection of standards in high, wide, and handsome style. Her voice is smoother and silkier than ever, her vitality and enthusiasm that of a teenager, and her skilled savvy in how to sell a song that of a master. Standout cut: a glittering, dia-

mond-like version of *I Had the Craziest Dream*. Welcome back, Ms. Forrest. P.R.

SUSANNAH MCCORKLE: *The People That You Never Get to Love* (see Best of the Month, page 83)

RECORDING OF SPECIAL MERIT

MAL WALDRON: *One Entrance, Many Exits*. Mal Waldron (piano); Joe Henderson (saxophone); David Friesen (bass); Billy Higgins (drums). *Golden Golson; Chazz Jazz; Herbal Syndrome*; and three others. PALO ALTO PA8014-N \$8.98.

Performance: **Superb**
Recording: **Quite good**




Pianist Mal Waldron combines high creativity with impressive technical skill to produce music that is both unique and enduring, yet we seldom hear his work on records these days. Waldron's music often leans toward the bizarre, but it is always eminently logical and accessible. On "One Entrance, Many Exits," recorded early last year, he leads a superb quartet comprising saxophonist Joe Henderson, bassist David Friesen, and drummer Billy Higgins. It brings to fruition the seeds Waldron was planting back in 1957 when he rendered a brief but memorable composition called *Nervous* on a television jazz event that has yet to be equaled, the celebrated CBS special *The Sound of Jazz*. More! C.A.

(Continued on page 112)

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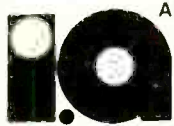
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Marsalis, Monk, and Mozart

THE trumpet artistry of young Wynton Marsalis is not by any means restricted to jazz, as he proves most eloquently with two simultaneous releases that are as different as, well, Monk and Mozart.

Indeed, Thelonious Monk and Leopold Mozart are both in Marsalis's repertoire, and it is from the former's little-known 1953 composition *Think of One* that his second album as a leader derives its title. This is an eclectic set featuring a quintet that is more or less his regular working group, with his older brother Branford on saxophones and the lyrical Kenny Kirkland on piano. The first album, "Wynton Marsalis" (Columbia FC 37574), demonstrated his ability to generate a commanding presence even with sidemen of the caliber and experience of Ron Carter, Tony Williams, and Herbie Hancock. The new album offers no bigger name than Wynton Marsalis himself, but none is needed; he has chosen his company well and with a keen ear for what is musical and tasteful.

While Marsalis is still developing as a musician, he already has an engaging way of his own, a style that represents a pleasant weave of Miles, Morgan, Armstrong, and Navarro, all acknowledged influences. That style is bound to evolve into something even more personal, and Marsalis has the good sense not to force it. "Think of One" is already more adventurous than its preceding album, and I'd bet that is due in part to Marsalis's having produced it himself.

As producer Marsalis leaves plenty of room for his fellow players. This is no blowing session but a well-planned set of musical variations that are as carefully honed and as spiffy as the leader's own appearance. Both in his playing and, apparently, in his attitude toward life, Wynton Marsalis displays a professionalism that defies his age and seems to run in the family. (Listen to brother Branford's sinewy Coltrane-rooted soprano on *The Bell Ringer*.) Altogether, there are six Marsalis brothers (look for trombonist Jason Marsalis to emerge next) as well as father Ellis, a boppish pianist.

The second new Wynton Marsalis release is a classical set, but it is definitely not the old Hazel Scott Boogie-Woogie to Bach gimmick revisited. Indeed, it is not a gimmick at all, for Marsalis is as at home with Hummel as with Hancock.

Superbly recorded, this digital album features one of those mysterious European ensembles, the National Philharmonic Orchestra (of England), conducted with characteristic dash by Raymond Leppard. The orchestra may lack a well-known identity but not musicianship. Marsalis performs with impressive aplomb in three trumpet show pieces, the most famous of which, Haydn's Trumpet Concerto in E-flat Major, he first played, with the New Orleans Philharmonic, when he was fourteen. Here, Marsalis's own cadenza ends the first movement, and, unless my ears deceive me, there is a salient smidgen of New Orleans in it. Marsalis's creativity also comes to the fore when he embellishes his part in the second movement of Leopold Mozart's Trumpet Concerto in D Major, but in doing so he is only following a tradition as old as the music itself. In sum, Wynton Marsalis's recording debut as a classical artist is every bit as impressive as his extraordinary jazz debut was.

—Chris Albertson

WYNTON MARSALIS: *Think of One*. Wynton Marsalis (trumpet); Branford Marsalis (soprano and tenor saxophones); Kenny Kirkland (piano); Phil Bowler, Ray Drummond (bass); Jeffrey Watts (drums). *What Is Happening Here (Now)?*; *Think of One*; *The Bell Ringer*; *My Ideal*; *Later*; *Melancholia*; *Knozz-Moe-King*; *Fuchsia*. COLUMBIA FC 38641. © FCT 38641, no list price.

HAYDN: *Trumpet Concerto in E-flat Major*. **L. MOZART:** *Trumpet Concerto in D Major*. **HUMMEL:** *Trumpet Concerto in E-flat Major*. Wynton Marsalis (trumpet); National Philharmonic Orchestra, Raymond Leppard cond. CBS ◉ IM 37846, © IMT 37846, no list price.

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By Drew Kaplan

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Performance: **Spirited and varied**
Recording: **Very good**

The soundtrack of the hit movie *Flashdance* contains some exceptionally spirited performances by an assortment of popular singers. While the styles here represent the whole range of current dance music, and while there are a number of composers and producers involved, the whole is dominated by Giorgio Moroder, who served as Donna Summer's producer during her reign as disco queen. Moroder produced and wrote the music for five of the ten selections here. His work is augmented by Sylvester Leroy's arrangements and a few special touches from Phil Ramone, who supervised the music for the film and himself produced or co-produced three songs on this disc. The collaboration was a successful one, resulting in a notable crispness and sonic brilliance, with synthesizer effects that are at times positively haunting.

As for individual performances, Irene Cara's rendition of the title song, *Flashdance*... *What a Feeling*, which has become a huge hit, pits her emotionally laden, bittersweet voice against a pulsating background, and Shandi's taunting treatment of *He's a Dream* is notable for its gutsy relish. Sweeter sounds characterize Laura Branigan's *Imagination* and Kim Carnes's *I'll Be Here Where the Heart Is*. There are some dogs tucked into the corners—Donna Summer's hiccupped *Romeo* left me cold, and Cycle V is absurd chanting "Soo-duce me tonight"—but in general I like the crackling energy of this album. P.G.

GANDHI (Ravi Shankar—George Fenton). Original-soundtrack recording. Ravi Shankar (sitar); orchestra. RCA ABL1-4557 \$9.98, © ABK1-4557 \$9.98.

Performance: **Good**
Recording: **Good**

The score for Richard Attenborough's epic film about the great Indian nationalist and spiritual leader Mohandas Gandhi was devised mostly by Ravi Shankar, and it is a fine and evocative piece of work. Shankar's virtuoso sitar playing is here put primarily in the service of dramatic inflection for the film's action. George Fenton composed the other incidental music in the beef-and-kidney-pie style so popular with the English even in the twilight of the British Raj. P.R.

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Ben Bagley Visits Bernstein and Elmslie

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THE latest releases in Ben Bagley's enormously valuable and, happily, continuing series of albums honoring the founding fathers of the "modern" American musical theater and those who followed are "Leonard Bernstein Revisited" and "Kenward Elmslie Visited." Bernstein, of course, needs no introduction. Elmslie does.

Elmslie seems to have hung around on the fringes of the business for a long time without ever really hitting any artistic or commercial jackpot. His earliest stage success was, perhaps, his book and lyrics for *The Grass Harp*, adapted from the novel by Truman Capote and produced off Broadway in the early Seventies. (The original-cast album was produced by Bagley and is still available on Painted Smiles PS 1354.) A widely published poet and novelist, Elmslie has been a busy librettist. He has worked with several leading American opera composers, including Jack Beeson, Ned Rorem, and Thomas Pasatieri, and his significant body of work in that form is represented here by a couple of scenes from *Washington Square*, an Elmslie/Pasatieri collaboration based on the Henry James novel. Judging by these brief but lovely excerpts in deeply felt performances by Catherine Malfitano and Brent Ellis, who created their roles for the Michigan Opera Theater, this is certainly a work I'd like to hear more of.

The rest of "Kenward Elmslie Visited"—the bulk of it, in fact—is given over to songs selected from shows Elmslie has worked on and assorted numbers ranging from the really good (*I Trust the Wrong People* from *The Grass Harp*, sung by Elaine Stritch, and Barbara Cook's rendition of *Beauty Secrets* from the as yet unproduced musical *Lola*) to the really terrible (*Eggs*, sung by Richard Thomas). But the focus here is, or should be, on the words. While the music, by various hands, sometimes upstages them, they are consistently literate and generally ring true. And, as always, Bagley has rounded up a terrific bunch of singers to put them across.

The Bernstein album brings some treasures to light too, particularly *Big Stuff*, a

song for which he wrote both the music and the lyrics. It was originally recorded by Billie Holiday for use as the juke-box ballad opening his ballet *Fancy Free*. Chita Rivera, who sings it here, is no Billie Holiday, but who is? Rivera also sings a wonderful song dropped from *Wonderful Town* (according to Bagley, because star Rosalind Russell couldn't sing it) called *The Story of My Life*, a litany of wrong moves and missed opportunities. The lyrics for this one are by Betty Comden and Adolph Green, frequent Bernstein collaborators who turn up a lot on this album. The least appealing numbers here are the ones Bernstein wrote with Alan Jay Lerner for the misbegotten *1600 Pennsylvania Avenue*. Among the most appealing are *We Are Women* and *Ringaroundarosie*, written for *Candide* but rarely used in productions of it. Again, fine performances of fine material too easily and too often overlooked. —Christie Barter

KENWARD ELSMLIE VISITED. Barbara Cook, Estelle Parsons, Catherine Malfitano, Elaine Stritch, George Rose, Brent Ellis, Richard Thomas, others (vocals); orchestra, Bruce Pomahac, Thomas Pasatieri conds. *Beauty Secrets; One Night Stand; The One and Only Person in the World; Brazil; "They"; The Candygram Song; The Richest Man in the World; I Trust the Wrong People; Who'll Prop Me Up in the Rain; Bang-Bang Tango; Eggs; Adele the Vaudeville Martinet. Washington Square: First Love; Catherine's Aria.* PAINTED SMILES PS 1339 \$9.98.

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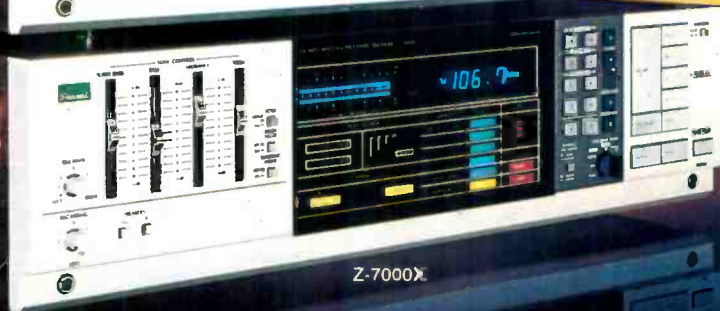
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