SPECIAL REPORT: DIGITAL DISC PLAYERS
Lab Tests of 11 Compact Disc Players
How to Buy a Compact Disc Player
Exploding 21 Audio Myths

Equipment Test Reports
- Teac Z-6000 Cassette Deck
- Acoustic Research AR8B Speaker
- dbx 4BX Dynamic-Range Expander
- Koss K/20 Headphones
- Sherwood ST-905 Turntable

Disc Specials
Mel Tillis • Lou Reed • Sly Stone
David Bowie • Gene Watson
Rachmaninoff's Third Symphony
Kiri Te Kanawa's Mozart
Offenbach's Operettas

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Complete Brahms on Disc
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BLAUPUNKT'S NEW ARI (Automatic Radio Information) system permits drivers to listen to tapes or talk to passengers without missing any traffic reports. Using special tones broadcast on the FM subcarrier, a station can inform drivers who have ARI-equipped car radios of an impending traffic alert. The radios will then raise the volume to a preset level or switch off the tape and turn up the radio volume for the broadcast report. The system has been in use in West Germany, Austria, and Switzerland for about ten years, and Blaupunkt expects ARI to be functioning in several North American metropolitan areas by year's end.

THE KOOL JAZZ FESTIVAL has expanded once again, this year including three new cities (St. Louis, Louisville, and Cleveland) in its network. The 1983 events began on June 4 in Washington, D.C., and will continue until November 12 in Milwaukee. Last year's festival attracted over 2,000,000 people to 456 individual concerts featuring 1,900 artists. Some of the new artists joining stalwarts like Ella Fitzgerald and Dizzy Gillespie this summer are Manhattan Transfer, Rosemary Clooney, and Chuck Mangione.

TECH NOTES: Acoustic Research has gone back into the turntable business. New product introductions at summer CES in Chicago included what Acoustic Research calls the "new" AR turntable. Price: $430 with a tone arm, and $280 without....According to Teri Yoshumi of Technics, by the end of May more than 45,000 digital Compact Disc players and 500,000 CD records had been sold in Japan. Of 369 titles available on CD's, 44% were classical, 18% popular, 18% Japanese, 11% jazz, and 7% Karaoke....The site for CBS/Sony's first U.S. factory for CD records will be a regular CBS plant in Terre Haute, Indiana. The plant will be converted from one format to the other....NEC Japan has reportedly developed a 1-gigabit magnetic bubble memory. (One gigabit equals 1 billion bits, enough storage for about a half hour of digital audio.) If such a device could be squeezed onto a small circuit chip and be made cheaply enough it would facilitate no-moving-parts digital players and recorders....According to a survey by the Consumer Electronics Group of the Electronic Industries Association, 31.2% of all U.S. households own component audio systems, a figure unchanged since a similar study done two years ago....The West German government has refused to allow the French government-owned Thomson to buy Grundig. Thomson has now turned its interest to AEG-Telefunken as part of an effort to create a European company large enough and strong enough to compete with the Japanese....Hollywood is at war with the electronics industry again, this time over the so-called first-sale doctrine, which allows the purchaser of a copyrighted work to rent or sell it to someone else. The movie and record industries would like to abolish the doctrine to prevent stores from renting video tapes and discs and audio tapes and records.

THE FM ATLAS AND STATION DIRECTORY published by Bruce F. Elving has just appeared in its eighth edition. On maps and in lists (cross-referenced by state and frequency) it indicates all the FM stations in the U.S., Canada, and Mexico, describing their program formats, coverage radius, and other information. The 128-page paperback can be ordered directly from FM Atlas, Adolph, Minn. 55701, for $6.95 plus 75¢ postage.

CONDUCTORS: Giuseppe Sinopoli, the young Italian who records exclusively for Deutsche Grammophon, has been appointed principal conductor of the Philharmonia Orchestra in London, beginning in January 1984....Claudio Abbado, also Italian, became principal guest conductor of the Chicago Symphony this season. Abbado has already made records with this orchestra for DG and has Berlioz's Symphonie Fantastique and Chopin's Second Piano Concerto with Ivo Pogorelich ready for release....Raymond Leppard has been named principal guest conductor of the St. Louis Symphony for 1984-1985.
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COVER: Design by Borys Patchowsky; photo by Bruce Pendleton. For more on the Magnavox FD 1000SL digital Compact Disc player, see article on page 44. Test reports on the Sherwood ST-903 turntable and the Koss K/20 headphones shown at right begin on pages 38 and 36, respectively. The equipment is resting on an oak lowboy cabinet from Custom Woodworking and Design of Bedford Park, Ill.

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GLUTTONY

WITH me, nothing succeeds like excess. Just a little too much of everything seems to be what it takes to meet my minimum daily requirements. Let’s Have Another Cup of Coffee. Let’s Have Another Piece of Pie. That’s my theme song, as is usually revealed by my waistline.

Efforts to introduce a little classic restraint into my life have rarely worked. I’ve bought more pictures than there is room for on my walls, and two cabinets in my living room have collapsed under the weight of too many records.

Hours spent listening to records of Beethoven’s thirty-two piano sonatas played by such artists as Artur Schnabel, Claude Frank, Daniel Barenboim, and Vladimir Ashkenazy have made these works very familiar to me. Consequently, when it was announced that the Austrian pianist Alfred Brendel was going to play all thirty-two sonatas in a series at Carnegie Hall, I thought I’d go up perhaps only half of them.

But when I realized that I’d never attended a whole live cycle in the concert hall, and when I read the rave reviews Brendel got for his traversal of the sonatas in London, I cast restraint to the winds and signed on for the whole series. I was going to play all thirty-two sonatas because Brendel has recorded the whole cycle twice, once for Vox and more recently for Philips. Both sets are still in the catalog, as are those by Claudio Arrau (thirteen Philips records), Ashkenazy (twelve Londons), Schnabel (thirteen Seraphims), and Wilhelm Kempff (ten DG’s).

Abundance of this kind on LP records tempts a collector to excesses of bingeing on Beethoven or pigging out on the Police. But we are not apt to overindulge in the same way on the new digital Compact Discs for a while. So far there are not enough CD’s of one composer or performer for an overdose, and demand exceeds supply for whatever has been released in this format.

Right away, however, the Compact Disc may tempt us to exceed our budgets. At press time the only stores in New York that had CD’s in stock were selling them for $20 to $25 each. Once you get a player and a few of the discs, you will probably play them over and over many more times than your neighbors want to hear them. And I think your neighbors will hear them because the absence of the kind of noise and distortion common on LP’s will tempt you to turn up the volume beyond reasonable levels when you first play CD’s.

In this issue we are publishing the results of Hirsch-Houck Labs’ tests of eleven CD players. (That’s more than I’ve seen in any other magazine, but we tried to glutony around here.) I think Julian Hirsch’s conclusions after testing these eleven units will make you want to buy a player at once even though for a while there will not be a lot of choice in the records you can play on it. So beginning on page 57 David Randa has some buying guidance for you on choosing a Compact Disc player.

When you have made your choice, paid your money, and played your CD’s, I think you will find yourself indulging in excessive torrents of verbiage. You will want to tell your friends about it. You will have strong views about microphone placement. And you will engage in endless debates about whether the sound is truly realistic. People I know who own players seem unable to shut up about them. The system is barely on the market and some of us are already turning blue in the face on the subject.
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FOR THE MUSIC IN YOU.
Compact Discs

- For the past year, we have been hearing about the wonders of the coming digital Compact Disc. One virtue claimed for the CD was that it would have undiminished sound quality over years of use because the scanning system would ignore the fingerprints, scratches, and the like that plague our present LPS. As David Ranada's April article ("Hands On the Digital Disc") makes clear, this is not so. CD's are just as susceptible to handling damage as analog discs. I think it is pretty sad that amid all the hype not one word has been said about this problem.

WILL J. PRICE
Hyannis, Mass.

Technical Editor David Ranada replies: Yes, Compact Discs are susceptible to audible effects from damage. However, the system will resist the audible effects of normal handling until the damage is extremely severe, certainly worse than would ever be tolerated on an analog disc. The point to remember is that during play a CD is part of a precision optical system. You should not, therefore, deliberately or carelessly mistreat it any more than you would purposely put fingerprints or scratches on a pair of eyeglasses or binoculars.

- Now that the digital era is fully upon us with the advent of the Compact Disc player, I hope record companies and producers learn very quickly that the public is tired of shoddy, amateurish recordings. The first CD's to become available to consumers have many of the same poor sound qualities as their analog LP's, indicating that no amount of high technology is going to compensate for careless and incompetent recording techniques. CD's do have tremendous clarity and transparency, delineating every detail—and mercifully exposing any flaws. Edits, excessive overdubbing, microphone noise and hum, and improper microphone placement are all clearly audible, as is sloppy performing by the recording artists. The CD's I have heard to date are so overly bright and edge sounding that I am inclined to continue buying audiophile LP's instead.

ARTHUR JOHNS
Lisle, Ill.

Technical Editor David Ranada replies: CD's can only sound as good as the master tapes used to make them. Much of the edginess Mr. Johns hears comes from microphone characteristics and use. Most professional microphones have a "presence peak" in the lower treble of as much as 5 or 6 dB! In analog disc and tape playback the audible effects of such a non-flat response are compensated for by response deficiencies in the playback systems. With a digital disc what is recorded is what you will get. As a PolyGram spokesman told me while I was visiting their CD plant in Hannover, there will always be room for "audiophile" recording companies wanting to take advantage of the high potential sound quality of the digital medium.

TODD RUNDGREN

- I loved reading Joel Vance's review in May of Todd Rundgren's solo album, "The Ever Popular Tortured Artist Effect." It's good to see Todd getting some good reviews. He's so talented, yet some critics just can't see how good a musician he is. Joel said it best: "There's no one else like him." And there never will be!

MARK SPEASE
Luverne, Minn.

Four-Channel Fan

- Why doesn't STEREO REVIEW ever mention four-channel equipment or recordings? Four-channel is alive and well. Could we please have some comments on its future uses or development?

R. C. JOHNSON
St. Paul, Minn.

Technical Editor Gordon Sell replies: Four-channel sound is still alive, but it is far from well commercially. A few companies still release some new quadraphonic records or tapes, but many of those that were made ten or more years ago, when quad was at its brief height, are still in the unsold inventories of the major labels. And no major electronics company is currently manufacturing four-channel equipment. Catalogs listing the four-channel recordings and equipment that are available can be had on request from Quad Inc., P.O. Box 19, Capron, Va. 23829.

The only real bright spot on the four-channel horizon is the availability of video discs and tapes of movie soundtracks that were originally encoded for showing in theaters equipped with Dolby Surround Sound. Home decoders are now being sold that can extract four audio channels from these recordings.

Made-in-America Opera

- At the risk of nit-picking, please allow me to mention, with reference to Christie Barter's May review of the Carlo Maria Giulini Falstaff recording, another recent U.S.-made opera recording: Sir Georg Solti's Der Fliegende Holländer with the Chicago Symphony (London OSA 13119), recorded in May 1976 at the Medinah Temple in Chicago. I believe that this work is as much "from the operatic mainstream" as Falstaff, although the same probably cannot be said of Porgy and Bess, which Lorin Maazel and the Cleveland Orchestra recorded the previous year.

DAVID R. YOST
Fostoria, Ohio

Christie Barter replies: London's Dutchman wasn't the only one. I discovered in May 1979 the same forces, Solti and the Chicago Symphony, recorded Beethoven's Fidelio with a cast headed by Hildegard Behrens and Peter Hofmann. The London digital recording (LDR 30017) was released in April of the following year.

Mystic Trumpeters

- I read with interest Richard Freed's May review of a new Lyrita recording of works by Gustav Holst. One selection in particular, The Mystic Trumpeter after Walt Whitman, caught my eye. I hadn't known that Holst wrote such a work [which

sound. Home decoders are now being sold that can extract four audio channels from these recordings.

here received its first recording], but I happened to have a Desto recording (DST-6407) made a good many years ago that includes The Mystic Trumpeter, Op. 19, an "Or-
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Virtuoso
chestral Fantasy after a poem by Walt Whitman," by the American composer Frederick Shepherd Converse (1871-1940). The performance is by the Vienna Symphony Orchestra under Max Schoenherr. Converse's piece was composed in 1903-1904, almost exactly the date of Holst's version. There must have been Whitmanian vibrations in the atmosphere at that time!

Richard K. Patterson
Hyde Park, N.Y.

"Pure" Rachmaninoff

- In Richard Freed's April review of several Vladimir Ashkenazy recordings ("A Vladimir Ashkenazy Festival") there are two mistakes in reference to Rachmaninoff's Second Piano Sonata. First, Ashkenazy's performance is not of a "pure 1913 version," and, second, the only pure recording of that version is the one by Michael Ponti in a Vox Box of Rachmaninoff's piano music (SVBX 5488).

I base this letter upon a comparison of the 1913 Guthel edition of the sonata and a copy of the 1931 revised version. Ashkenazy uses several figurations from the revised version in his recording. His only substantial change is the inclusion of a quotation of the first movement's second theme in the coda of the second movement, but this does not correspond with anything in the original version. His London recording, moreover, is the second to be mislabeled as the 1913 "original version." The first was the one by Jean-Philippe Collard on Connoisseur Society (CS 2082).

For the record, Vladimir Horowitz (on CBS and RCA), Ruth Laredo (on CBS), Collard, and Ashkenazy all perform a combination of the two versions. Horowitz adds a few of his own ideas in his RCA recording. Van Cliburn played the original version with a few minor cuts on a now-deleted RCA recording. John Ogdon (on RCA, deleted) and Claudette Sorel (Musical Heritage Society) both perform the revised version as written.

To the best of my knowledge, the score of the original version is not currently available, except perhaps in Russia. There might be a market for this work if any publisher would print it.

James Harrington
Chester, Pa.

Richard Freed replies: Mr. Harrington is, of course, entirely correct. I'm afraid I was not attentive enough in this case and simply passed on misinformation.

Musical Youth

- I usually agree with Mark Peck's reviews, but is he kidding in calling Musical Youth's album "The Youth of Today" a Recording of Special Merit (April issue, page 82)? If I'm listening to the radio and Pass the Dutchie comes on, I change the station. It is one of the most mindless songs I've ever heard, and I'm still trying to figure out what "Pass the Dutchie upon the left-hand side" means! Sorry, Mark, but I can resist "these cherubic Jamaican voices," and so can all of my friends.

David Jackino
Potsdam, N.Y.

Corrections

- In the "Laboratory Measurements" section of our June test report on the Onkyo TA-2035 cassette deck, the wow-and-flutter measurements were incorrectly stated. The correct figures for the unit tested are 0.032 per cent wrms and 0.045 per cent DIN peak-weighted.

- David Hall's June review of a Philips recording of the Liszt piano concertos by Misha Dichter and the Pittsburgh Symphony Orchestra conducted by André Previn stated that it appeared to be the orchestra and conductor's debut on the label. It was not. Previous Philips releases by Previn and the Pittsburgh include records of Tchaikovsky's Fourth Symphony (9500 972) and of Saint-Saëns's Carnival of the Animals coupled with Ravel's Mother Goose Suite (9500 973).

- Because of an editing error, Eric Salzman's June review of an album of music by George Antheil incorrectly stated that the Fernand Léger film for which Antheil wrote his Ballet Mecanique "never got made." The film of the same name was in fact produced and released in 1924.
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The Micro-Acoustics 830 CSA direct-coupled electret phono cartridge uses a new stylus shape analogous to that of a popular master-disc cutting stylus. This new shape is said to allow more exact tracing of the record groove, resulting in superior tracking and resolution as well as a significant reduction in record wear. The cartridges are “hand crafted” and individually tuned and damped to eliminate spurious resonances. Every unit comes with its own calibrated response curve.

Frequency response using the CBS STR 170 test record is given as 5 to 20,000 Hz ±0.75 dB. Tracking-force range is 0.7 to 1.4 grams. Output voltage is 3.5 millivolts. Transient ability (rise time), said to be unaffected by cable or preamplifier-input loading, is given as 4.2 microseconds. Channel separation is 30 dB at 1,000 Hz, 25 dB at 10,000 Hz. Cartridge weight is adjustable between 2.5 and 4 grams. Price: $335. Micro-Acoustics Corp., Dept. SR, 99 Castleton Street, Pleasantville, N.Y. 10570.

Circle 120 on reader service card

Sony's Deluxe Beta Hi-Fi VCR

The second Sony video-cassette recorder to incorporate the Beta Hi-Fi system of high-fidelity sound recording, the SL-2700, also offers advanced programming, tuning, and playback features that make it the company's top-of-the-line VCR. The Beta Hi-Fi circuits make possible stereo audio recording using frequency-modulation techniques that produce sound far superior to that of typical VCR's. Dynamic range is greater than 80 dB; frequency response is given as 20 to 20,000 Hz; 0.1% -3 dB; wow-and-flutter is less than 0.005 per cent (wrm); and total harmonic distortion is less than 0.3 per cent at 400 Hz.

Various other features of the SL-2700 take advantage of the Beta Hi-Fi technology. For instance, the 2X Fast Play Plus Sound mode allows speeded-up review of video-programming, with fully intelligible voice or music reproduction. A peak-reading record-level meter system lets the user adjust the stereo recording level for best audio performance. The unit is easily set up to record FM simulcasts using the built-in TV tuner and a stereo audio signal from a separate FM receiver or tuner. There is a built-in MPX output for connection to an outboard stereo-TV decoder when stereo TV broadcasts start. The headphone output has a separate level control. Audio inputs and outputs operate at typical stereo system line levels through phono jacks.

The front-loading SL-2700 comes with a wireless remote control, and is equipped with the unit's functions, including high-speed picture search; pause, freeze-frame, and Swing Search modes; and TV channel selection. A fourteen-day/four-event programmable clock/timer can be set to record broadcasts.

Yamaha Receiver Is Computer Controlled

Yamaha's new 100-watt-per-channel R-100 AM/FM receiver features a sophisticated frequency-response adjustment system—called CCSS, for Computer Control Sound System—that replaces conventional tone controls, loudness controls, and filters. The heart of the system is a microcomputer-controlled equalizer with five bands centered at 60, 250, 1,000, 4,000, and 16,000 Hz. Three custom response curves for different listening situations can be programmed into the system's memory and recalled at the touch of a button. Five other one-touch programmed response adjustments are available: bass boost, loudness compensation, presence boost, treble boost, and high-frequency filter. Any response curve programmed by the user can be altered within ±12 dB by use of an up/down control bar. The response curve chosen at any time is shown graphically by an LED display.

The R-100 also incorporates a single-ended noise-reduction system, called the Dynamic Noise Canceller, that is said to reduce noise from any source, whether tape, disc, or broadcast. An AUTO PHONO feature automatically switches the input selector to phono whenever the tone arm of a turntable connected to it is lowered onto a record. Yamaha's Zero Distortion Rule circuitry is said to eliminate distortion generated in the power-amplifier stage. In addition, a low-impedance speaker-protection circuit permits the R-100 to drive low-impedance or parallel-wired speakers without unnecessary amplifier shutdowns. A Spatial Expander slide-control is said to extend the stereo sound field beyond the speakers.

The receiver's digital-synthesis tuner section has two different tuning modes for optimum performance under varying reception conditions. Its microcomputer selects either phase-locked-loop tuning or FM-servo tuning according to incoming signal strength. Five FM and five AM station presets are available. Other features include connections and switching for two pairs of speakers and two tape decks, a front-panel selector switch for moving-coil and moving-magnet cartridges and a supplied infrared remote-control unit.

RATED output power is 100 watts into 8 ohms (continuous) and 130 watts into 4- and 2-ohm loads (dynamic). IHF dynamic headroom is 1.5 dB with 8-ohm loads. RIAA de-emphasis is within ±0.5 dB. FM-tuner usable sensitivity is 0.75 microvolt. Stereo 50-dB-quieting sensitivity is 20 microvolts. Capture ratio is 1.2 dB (in the PLL reception mode). Frequency response is 30 to 15,000 Hz +0.3, -0.5 dB. Dimensions are 17 4/8 x 4 15/16 x 5 5/16 inches. Weight is 24 pounds. Price: $795.

Circle 121 on reader service card
automatically. The tuning system provides access to nonscrambled cable channels as well as regular VHF and UHF channels without requiring a converter box. The two-head, helical-scan video recording system provides a video signal-to-noise ratio better than 45 dB. Dimensions are 17 x 4 1/2 x 14 inches. Overall weight is 24 pounds, 11 ounces. Supplied accessories include a Beta Hi-Fi demonstration tape. Price: $1,500.

Circle 122 on reader service card

Low-Distortion Circuits in Luxman Cassette Deck

■ Luxman’s new K-210 cassette deck offers both Dolby-B and Dolby-C noise reduction and “Duo-Beta” circuits that are said to virtually eliminate the audible effects of negative feedback. A d.c. servomotor is used to drive the capstan. The transport system uses a dynamically balanced flywheel and a specially processed drive belt to increase stability. The deck has soft-touch controls, metal-tape capability, a twelve-segment fluorescent peak-reading record-level display, and a “skew-adjustment” hole in the cassette-well door that permits user adjustment of head azimuth for optimum playback of tapes recorded on other decks. A headphone output and two microphone inputs are included as well as separate left- and right-channel record-level slide controls. Frequency response is given as 20 to 19,000 Hz with metal tape, signal-to-noise ratio as 70 dB with metal tape and Dolby-C. Wow-and-flutter is 0.05 percent (rms). Dimensions are 17 1/4 x 6 1/4 x 14 1/2 inches. Price: $249.94.

Circle 123 on reader service card

High-Sensitivity Wharfedale Speakers

■ Wharfedale’s new “Mach” series of loudspeakers, replacing the company’s previous E series, consists of four models: the Mach 3, Mach 5 (shown), Mach 7, and Mach 9. All have high sensitivity and high power-handling capability in relatively compact cabinets.

A three-way bass-reflex system, the Mach 5 incorporates a 7 1/4-inch low-inertia bass driver, a 4-inch high-flux midrange unit, and a 1-inch horn-loaded tweeter. A continuously variable tweeter control adjusts tonal balance over the 5,000- to 22,000-Hz band. The system is protected by a rapid-action thermal-overload circuit. Crossover frequencies are at 1,000 and 5,000 Hz; crossover slopes are 6 and 12 dB per octave, respectively, using a seven-element network.

Recommended amplifier power ranges from 15 to 125 watts. Rated sensitivity at 1 meter is 94 dB sound-pressure level with a 1-watt input. Nominal impedance is 8 ohms. Frequency response is given as 62 to 17,000 Hz ± 3 dB. Finish is high-density particle board covered with natural-walnut veneer. The front baffle is made of high-impact structural-foam polystyrene, and the grille cloth is knitted from an acoustically transparent black yarn. Dimensions are 22 1/2 x 13 x 11 1/2 inches. Price: $225.

Wharfedale, Dept. SR, 291 Strawtown Road-1, West Nyack, N.Y. 10994.

Circle 125 on reader service card

Stylus-Care Kit from Audio-Technica

■ The AT6016 TechniClean Stylus Maintenance System from Audio-Technica consists of a stylus cleaning pad/applicator with an inspection mirror on its reverse side. A smoked-acrylic lock-on cover protects the cleaning pad from dust and contamination. The supplied small bottle of TechniClean stylus-cleaning solution can be stored inside the handle of the brush. Price: $14.95.

Circle 126 on reader service card

Digital-Audio Adaptor From Nakamichi

■ Nakamichi’s DMP-100 Digital Mastering Processor (right in photo) converts a stereo pair of audio signals into a video-type digital-audio signal for recording and playback on a home video-cassette recorder. It is compatible with any home VCR meeting U.S. television-signal standards (including both the VHS and Beta formats) and having direct video input and output jacks. The DMP-100 adheres to the fourteen-bit EIAJ digital-audio standard for encoding digital-audio signals on video tape but also provides the option of a sixteen-bit quantization mode for greater dynamic range. The choice of fourteen- or sixteen-bit encoding is made with a rear-panel switch. In play-
Presenting High Bias II and the Ultimate Tape Guarantee.

Memorex presents High Bias II, a tape so extraordinary, we're going to guarantee it forever.

We'll guarantee life-like sound.

Extraordinarily flat frequency response at zero dB recording levels, combined with remarkably low noise levels, means music is captured live. Then Permapass, our unique oxide-bonding process, locks each oxide particle—each musical detail—onto the tape. So music stays live. Not just the 1st play. Or the 1000th. But forever.

We'll guarantee the cassette.

We've engineered every facet of our transport mechanism to protect the tape. Our waved-wafer improves tape-wind. Silicone-treated rollers insure precise alignment and smooth, safe tape movement. To protect the tape and mechanism, we've surrounded them with a remarkable cassette housing made rigid and strong by a mold design unique to Memorex.

We'll guarantee them forever.

If you ever become dissatisfied with Memorex High Bias II, for any reason, simply mail the tape back and we'll replace it free.
back the DMP-100 senses the encoding format and decodes the signal accordingly. Digital program material can be dubbed using the DCPV copy switch. Copies made with the DMP-100 are perfect replicas of the original, with no increases in noise and distortion or changes in frequency response.

The processor unit comes with a separate a.c. power supply (PS-10) for line operation (left in photo), but it can also be operated from any 12-volt source capable of delivering 17 watts of power. A headphone jack five-step attenuator allows user monitoring while a recording is in progress. Other features include a twenty-four-segment peak-holding record-level display with a 50-dB dynamic range; separate left- and right-channel record-level controls; low-noise, high-overload-level microphone inputs with front-panel phone jacks (unbalanced); and LED indicators for battery level, muting, pre-emphasis, copy-prohibition, and VCR tracking.

Frequency response is from 10 to 20,000 Hz ± 1 dB. Dynamic range is greater than 90 dB, and total harmonic distortion is less than 0.006 per cent (using the sixteen-bit format). Separation is more than 80 dB, and wow-and-flutter is below measurable limits. The DMP-100 measures 8 1/2 x 3 1/4 x 12 1/8 inches and weighs 8 pounds, 13 ounces. The power supply is 4 1/4 x 3 1/4 x 12 1/8 inches and weighs 6 pounds, 10 ounces. Price for both: $1,990.

Circle 127 on reader service card

Car Speaker from Acoustic Research

□ AR's AR1CS is an infinite-baffle two-way speaker system for automotive applications. It has a 5 1/4-inch woofer and a 3 1/4-inch magnetic-fluid-cooled dome tweeter housed in a black, scratch-resistant, glass-fiber-reinforced plastic enclosure with a steel grille. Voltage sensitivity is 89 dB sound-pressure level with a 2.83-volt input signal. Nominal impedance is 4 ohms, 3.6 ohms minimum. Minimum recommended amplifier power is 5 watts, and maximum power-handling capability is 100 watts on program peaks. System frequency response is given as -3 dB at 63 and 30,000 Hz. Crossover frequency is 2,200 Hz.

The speaker mounts in a round hole with a diameter of 4 1/2 to 5 1/2 inches. The below-panel depth is 1 1/4 inches. Overall above-panel dimensions are 8 1/8 x 5 1/16 x 1 1/8 inches. The units are sold in pairs. Price: $129.99 each.

Circle 128 on reader service card

Konica Introduces Audio and Video Tapes

□ Japan's Konica (Konishiroku Photo Industry), known primarily in this country for its cameras and color film, has joined the ranks of tape manufacturers with a line of audio and video cassette tapes. In addition to VHS and Beta video cassettes, the firm has four grades of audio cassettes. From the top down they include a metal-particle tape; Grand Master II (GM-II), a high-bias chrome-type tape; Grand Master-I (GM-I), a high-output, low-noise, normal-bias tape; and Master Low Noise (ML), a low-noise normal-bias tape. All grades are available in C-60 and C-90 lengths; the ML tape is also offered in the C-120 length. Prices for C-90's: metal, $7.49; GM-II, $3.99; GM-I, $3.59; ML, $2.59. Konica, Dept. SR, 440 Sylvan Avenue, Englewood Cliffs, N.J. 07632.

Circle 129 on reader service card

Basic Belt-Drive Turntable From Ariston Audio

□ The new Ariston RD40 basic turntable (without tone arm) has many features in common with Ariston's previous, more expensive models. A belt-drive unit with an a.c. synchronous motor, the RD40 contains a diameter of 4 1/2 to 5 1/2 inches. The below-panel depth is 1 1/4 inches. Overall above-panel dimensions are 8 1/8 x 5 1/16 x 1 1/8 inches. The units are sold in pairs. Price: $129.99 each.

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Visonik's Class-A Car Stereo Amplifier

□ Visonik's new A265, said to be the first class-A power amplifier for car stereo applications, has an output of 65 watts per channel into 4-ohm loads. It can be bridged for mono operation and will then deliver 130 watts into either 4 or 8 ohms. Total harmonic distortion is rated as less than 0.01 per cent from 20 to 20,000 Hz. The Perma-Tect protection circuit monitors the output functions, thirteen-segment LED peak-reading record-level meters, timer-standby switches, and automatically switched FM multiplex-pilot filters. Rated frequency response for the V-400X is 30 to 18,000 Hz with metal tape. Signal-to-noise ratio (S/N) is 85 dB with dbx noise reduction; wow-and-flutter is given as 0.06 per cent. The V-500X, similar in appearance to the V-400X, also offers Dolby-C noise reduction, a cobalt-amorphous record/play head, a Computomatic Program System for cueing specific selections, a mutipurpose electronic tape counter, and a memory play/stop/repeat function. Wow-and-flutter for the V-500X is 0.05 per cent; frequency response is 30 to 20,000 Hz with metal tape. The S/N is also 85 dB with dbx. Prices: V-400X, $260; V-500X, $340.

Circle 131 on reader service card
The Bose® 901® - past, present, future.

**Past** The first Bose 901 Direct/Reflecting® speaker was introduced in 1968. It was the result of research started twelve years before at M.I.T. under the direction of Dr. Bose. This speaker introduced the fundamental advances of a balance of reflected and direct sound, near matched, full-range speakers, active equalization and uniform power response — all very controversial concepts at the time. But the performance produced by this new technology soon earned for the 901 speaker its international reputation as the most highly reviewed loudspeaker regardless of size or price.

**Present** The founders of Bose, all from the field of science, decided that Bose would reinvest 100% of its profits back into the company to maintain the research that was responsible for the birth of the 901 loudspeaker. The unprecedented success of the Bose® 901® in world markets, coupled with this 100% reinvestment policy, has created what we believe is by far the best research team in the industry. This team has made over 300 design improvements in the 901 speaker since its introduction — including such basic developments as the Acoustic Matrix™ Enclosure (illustrated), the helical, low impedance voice coil and the advanced full-range precision drivers.

**Future** At Bose we have decided that "901" will continue to be the designation of the product that represents the state-of-the-art of our technology — whatever size, shape or form that product may take. In our research we continue to look at any and all technologies and product concepts that might hold possibilities for better sound reproduction. Consistent with the past, we will introduce new technology into the 901 speaker as it is developed — often without announcement. This is our dedication to the goal that whenever you invest in the Bose® 901® system you will receive the latest technology and the best in music reproduction.
current and the voltage across the output transistors and limits the output power when necessary without otherwise interfering with the signal. There are also thermal circuit breakers to prevent overheating.

The A265 uses a full complementary-symmetric design with 30 dB of negative feedback and wide open-loop bandwidth. It has a variable low-level input (110 to 550 millivolts) for use with most car radio/tape players. A Molex plug and harness are included for easy hookup. Price: $350. Visonik of America, Inc., Dept. SR, 701 Heinz Avenue, Berkeley, Calif. 94710.

Circle 132 on reader service card

Sanyo's Lowest-Priced Cassette Desk

Sanyo's Model RD7 cassette desk offers Dolby-B noise reduction and both recording and playback capability with ferric, chrome-type, and metal tapes. The five-segment LED recording-level meters are calibrated from -10 to +6 dB. There are piano-key transport controls and a soft-eject cassette-well door. Other features include a stereo headphone jack, two microphone inputs, a tape counter, separate left- and right-channel input-level controls, and a d.c. servomotor drive system. Wow-and-flutter is given as 0.08 per cent (wrm). Frequency response is stated to be 40 to 15,000 Hz. Signal-to-noise ratio with the Dolby circuits off is 54 dB. Dimensions are 11 3/4 x 7 1/4 inches. Price: $69.95. Visonik of America, Inc., Dept. SR, 701 Heinz Avenue, Berkeley, Calif. 94710.

Circle 133 on reader service card

Car Speaker Line From Infinity Systems

Infinity Systems' four new "Reference Standard" automotive speakers feature the same components and materials as the company's home speakers. Both the top-of-the-line 6 x 9-inch A693 (shown) and the 6 1/2-inch A63 use Infinity's EMIT tweeter. All four models have polypropylene low-frequency drivers for reduced distortion and increased clarity and reliability. Other common features are reinforced grilles, heavy-duty steel frames, and high-durability driver materials.

The A693 is a three-way system with a polycarbonate midrange driver. The mid-range and tweeter are mounted in a separate module designed to minimize interference with the woofer output. Frequency response is given as 40 to 32,000 Hz. The speaker requires a mounting hole of 5 1/16 x 8 3/16 inches with a depth of 3 inches. The round A63, also a three-way system, is intended for installations requiring a more compact unit. Its midrange and tweeter are the same as the A693's, but its smaller woofer allows mounting in a standard 5 1/4-inch hole (2-inch depth) with no significant loss in bass response. Frequency response is given as 60 to 32,000 Hz.

The two-way A62 incorporates a polycarbonate midrange/tweeter in a 6 1/2-inch-diameter round case. Frequency response is 60 to 18,000 Hz. The mounting hole must be 5 1/4 inches wide with a depth of 2 inches. The smallest unit in the line, the two-way A42, has its woofer linked to a separate polymer high-frequency cone through a mechanical crossover. Stated response is 100 to 15,000 Hz. The required mounting width is 4 1/4 inches. An accessory stand-off ring decreases mounting depth from 1 3/8 inches to 3/4 inch. Prices per pair: A693, $179; A63, $139; A62, $99; A42, $75.

Circle 134 on reader service card

Sumiko Phono Preamp Drives Power Amps

Designed to deliver state-of-the-art phono reproduction without requiring investment in a state-of-the-art preamplifier, Sumiko's PhonoAmp connects between a phono cartridge and a power amplifier. It can function either as a system preamp or in conjunction with another preamplifier. For use with both moving-coil and moving-magnet cartridges, the PhonoAmp's active impedance-synthesis circuit allows optimum matching of cartridge response by a continuously variable damping control.

The design of the unit's gain control is said to eliminate the need for the line amplifier required by a conventional volume control. To assure freedom from overload under any conditions, the input stage will handle in excess of 0.5 volt from nearly 0 Hz to 1 MHz. The unit's metal-film resistors are built to a 1 per cent tolerance and its capacitors to 2 per cent. A bypass switch allows a conventional preamplifier or line-level component to be patched through the PhonoAmp. The cabinet is made of solid koa wood.

RIAA de-emphasis accuracy is given as ±0.2 dB from 20 to 20,000 Hz. Signal-to-noise ratio in the low-gain position is 85 dB; with high gain it is 80 dB (A-weighted). Total harmonic and intermodulation distortion are both less than 0.02 per cent. Price: $560. Sumiko, Dept. SR, P.O. Box 5046, Berkeley, Calif. 94705.

Circle 135 on reader service card

JVC Turntable Has Improved Suspension

JVC's QL-L2 quartz-locked, fully automatic linear-tracking incorporatees an independent suspension system in which the tone arm and motor are mounted on a separate subchassis suspended from acoustic insulators. The tone arm itself uses an optical sensing system to maintain tangency with the disc groove at all times. The arm accepts P-mount plug-in cartridges. The unit's coreless d.c. servomotor with double-serve quartz control has a wow-and-flutter rating of 0.025 per cent. Other specifications include a signal-to-noise ratio of 78 dB (DIN-B) and a speed deviation of 0.005 per cent. Dimensions are 17 1/4 x 31 3/16 x 14 3/16 inches. Weight is 114 pounds. Price: $240.

Circle 136 on reader service card

BASF's New Open-Reel Tape

Ferro Super LH is the third open-reel formulation in BASF's current line of tapes. It is a 1-mil-thick, back-coated tape intended for studio mastering as well as on-location and audiophile open-reel recording.

The coating formulation is said to deliver very low distortion with reduced noise. Back coating is claimed to eliminate static and dust debris and guarantee smooth winding even at high speeds. The tape is available in 1,800-foot lengths on 7-inch plastic reels and in 3,600-foot lengths on 10 1/2-inch NAB-hub metal reels. Both lengths use both clear and metal-foil leader. Prices: 7-inch reel, $11.99; 10 1/2-inch reel, $31.99.

Circle 137 on reader service card
New Players Kings.
Regular and Menthol

12 mg "tar," 1.0 mg nicotine av. per cigarette, by FTC method.


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Audio Q. and A.

By Larry Klein

Beta / VHS Stereo?

Q. I was very impressed with the audio performance of Sony's Beta Hi-Fi video-cassette recorder as reported on by Julian Hirsch in the April issue. I would like to replace my old VCR with an up-to-date model with excellent audio performance—such as a Beta Hi-Fi unit—but I own dozens of tapes made on my VHS-format machine. Is there any indication that there will be a VHS machine with audio performance equivalent to Sony's?

CHARLES SCHWARTZ
Jackson Heights, N.Y.

A. Although the Japanese have often been referred to as "Nippon Incorporated" in recognition of their tendency to act cooperatively when their national industrial interest is concerned, their day-to-day competition at the sales level can be fierce! The Beta and VHS formats have been slug- ging it out in the marketplace for about eight years now, each significant technical advance by either group being at least matched by its competitors in the next generation of machines. When Sony announced Beta Hi-Fi, it didn't take special insight to predict that the VHS manufacturers would shortly announce an equivalent product—no matter how formidable the technical problem might be. And, in fact, at least six months ago Matsushita Electric and JVC both demonstrated hi-fi audio VCR's at a Japanese electronics show. For reasons having to do with the differences in how Beta and VHS video signals are recorded, the VHS designers had to take their own technical path to hi-fi audio recording—while maintaining compatibility with standard VHS recordings. As should be expected, the performance claims for the hi-fi VHS system are just about on the same superb level as Beta Hi-Fi.

According to our sources, hi-fi VHS will be available "sometime late this year."

Digital Tuning

Q. I've noticed that many FM rock stations advertise themselves as being at, say, "100 on your FM dial," but my digital tuner won't tune to 100. It will give me either 99.9 or 100.1. Although the stations seem to come clearly, I'm concerned that my tuner may need adjustment.

H. R. PHILLIPS
Schiller Park, Ill.

A. If anything needs adjustment, it's the thinking of those who like to reduce such things as frequency assignments to the short, "punchy," and simpleminded. In the United States, all FM-band stations operate on odd-numbered frequencies 0.2 megahertz apart. at, say, 99.9 or 100.1 MHz, not 100. There won't be much of anything at "100 on your dial!" except noise or a distorted, mistuned signal.

Shattering Experience

Q. How does one go about breaking a glass with sound as in those Memorex commercials on television?

JOSEPH J. KALO
Chapel Hill, N.C.

A. First of all, you'll need a wine goblet, because in order to be shattered by a reasonable amount of sonic energy an object has to be both rigid and relatively fragile. Second, you'll need a source of sonic energy, such as a loudspeaker, that can be driven by an audio oscillator to the goblet's resonant frequency. A finger rested lightly on the rim of the goblet (placed in front of the speaker) will tell you, from the increase in vibration, when you've tuned the oscillator to the correct frequency. If you then turn up the volume, the glass will literally flex itself to pieces. The critical frequency for the wine glasses used by Memorex is in the range of 700 to 850 Hz. To be effective, the impinging frequency has to be within 1 or 2 Hz of the specific goblet's fundamental resonance.

Shattering a glass with a singing voice rather than an oscillator and speaker is obviously much more difficult since the performer must be able to sustain the note at the critical resonant frequency. Memorex's amplification of a tape-recorded voice hitting the right note produces the necessary acoustic power (about 140 dB). It has been claimed that the great opera stars of the past could shatter glass by sheer vocal power without any electronic assistance. Given the technical problems involved, I tend to doubt it. But perhaps in those days the crystal was weaker or the voices were stronger—or the public was more gullible.

MM/MC Loudness

Q. I have a receiver that will accept both moving-coil (MC) and moving-magnet (MM) phono cartridges, and I recently bought a well-reviewed MM cartridge to compare with the MC cartridge I already had. Much to my surprise, when I installed the new cartridge and switched my amplifier to the MM position it didn't play as loud as with my older MC cartridge. Don't moving-coil cartridges have a lower signal output than moving-magnet types?

DAVID LICHT
Jackson Heights, N.Y.

A. In general, they do. When you switch your receiver to the MC position, however, you are actually switching in an extra fixed-gain stage designed to make up for the lower output of the MC cartridge. As an example, say your MC cartridge has a 0.2-millivolt output and your MM cartridge a 1-millivolt output for the same record-groove excursion. Suppose further that the extra circuits that are switched in when you go to the MC position have a gain of 20. The result is likely to be a louder signal from the moving-coil cartridge than from the higher-output moving-magnet type. Of course, if you were to go to a lower-output MC cartridge and/or a higher-output MM type, the situation could reverse itself.

Excessive Filtration?

Q. I own a Nakamichi noise-reduction system that includes a subsonic filter. I leave this switch on at all times. On my amplifier I leave the subsonic switch on at all times too, and I leave the 16-Hz band on my equalizer in the reduced position. Is all this subsonic protection necessary? Am I reducing the bass response of my speakers?

TERRY O'SHEA
Ontario, Canada

A. As a point of information, the more widely accepted term is "infrasonic," not subsonic, which applies to sound too low to be heard, not frequency. Just as you will find infrared radiation below the visible spectrum, infrasonic vibration is below the audible spectrum. (Of course, I'm aware that hi-fi manufacturers, who as a group are less than world-famous for verbal sophistication, frequently label their infrasonic filter switches "subsonic.") As to whether you are engaging in excessive infrasonic filtration and perhaps rolling off audible bass, that's hard for me to know but easy for you to find out. Play a record with heavy low bass and check for differences in the sound with the various filters switched in and out. Your ears are a better guide than any guess I could make about the sonic effect of filters whose characteristics I don't know.
WHY PUT TWO FILTERS INTO ONE GREAT COMPACT DISC PLAYER?

Kyocera goes to double lengths to make sure there's no distortion in its DA-O1 Compact Disc Player. It's got both digital and analog filters—so nobody hears distortion.

The advantage of digital and analog filtering systems.
Modern technology has made analog filters pretty effective. But there can be a problem—analog filters by themselves render limited performance. By combining an analog filter with a digital filter, and precisely applying both types in just the right way, the limitations found with analog filters are not there anymore. Thanks to the unique use of these filters, and an impressive array of very advanced circuitry, the Kyocera CD Player provides accurate, crystal-clear, lifelike sound.

The awesome specs that only digital can provide.
Needless to say, the Kyocera DA-O1 comes through with some specs that are mind-boggling: A full 90 dB dynamic range...flat frequency response from 20-20,000 Hz...quiet 90 dB S/N ratio...and total isolation 90 dB channel separation.

And, just in case you didn't realize it, with the fabulous disc player system, as provided in Kyocera's DA-O1 Player, there is no contact between disc and playback head. No tics, clicks, pops, scratches or record wear. And the DA-O1 plugs right into your present audio system—Kyocera or others—just like a conventional turntable.

Easy to use, but total control of every function.
The DA-O1 is easier to use than a modern cassette deck—slide the compact disc into the disc compartment, shut the door and hit the play button. With the DA-O1's feather-touch controls, you can play the whole thing (60 minutes a side)...repeat a track...scan...pause...skip...advance...index...and program up to 24 different segments with an electronic memory. A functional LED digital panel tells you program running time and just where the optical scanner is on the disc.

Admittedly, our DA-O1's are carried only by selected dealers. If you have trouble finding one, contact: Kyocera International, Inc., 7 Powder Horn Drive, Warren, NJ 07060 (201) 560-0060.
Tape Talk

By Craig Stark

Microphone Inputs

Q: Why do home cassette decks have microphone inputs? Do many users make live-music recordings in their homes? I do not recall reading a test report on a cassette deck that included any tests of the microphone inputs with live music. For that matter, how many readers lug a.c.-powered decks to a live concert?

JAMES H. HARGER
Annandale, N.J.

A: Reader Harger’s question—and implied answer—has evidently also occurred to the Japanese manufacturers of the decks most of us buy, since an increasing number have no microphone inputs at all. I suspect that most home recordists who do use microphones use them principally to tape grandmother’s voice on her eightieth birthday or for other spoken-word applications. I have, indeed, recorded a certain amount of live music in my home; since my two children play violin and piano, and hearing themselves on tape is often a valuable incentive to practice. For serious, live-concert recording, however, open-reel tape is the definite choice. Not only can it be edited easily, but it can record a greater dynamic range than even the best cassettes can handle.

For these reasons the microphone preamplifiers built into typical cassette decks are generally of marginal quality at best. A really quiet mike preamplifier is very costly, and all stereo records and tapes and home recording number have no microphone inputs. You total satisfaction is unconditionally guaranteed.

Discount Music Club is a no-obligation membership club that guarantees tremendous discounts on all stereo records and tapes and lets you buy what you want . . . when you want . . . not at all if you choose. These are just a few of the many-saving reasons to write for free details. You can look into why not fill out and mail the coupon below for immediate information.

Tape Types

Q: What are the differences among ferric, chrome, and metal tapes, and when should one use each type? Also, is “70-microsecond” the same as “high bias” and “120-microsecond” the same as “normal bias?” My deck has little pins just inside the door that are supposed to adjust for different types of tape, but do all cassettes have the corresponding holes?

BOW RASMUSSEN
San Pedro, Calif.

A: The terms ferric, chrome (or ferric-cobalt, or CrO₂-equivalent), and metal are used to describe the various magnetic materials with which recording tape is coated. Ferric oxide tape is the most common type and has been around since 1939. Its required bias—an ultrasonic tone, fed to the tape along with the music, that lowers distortion and noise—is called normal bias. Cassettes using normal bias also use 120-microsecond playback equalization (bias is not used during playback). Since two sections of one switch can handle both the recording-bias level and the appropriate playback equalization, a single switch (or detector pin) is sufficient.

Chromium dioxide (and cobalt-treated ferric oxides that behave like chrome) first came into use about a dozen years ago when the problem of cassette high-frequency response was acute. Tapes coated with it require about 50 per cent higher recording bias and are played back with a 70-microsecond frequency equalization. Since the introduction of chrome, however, premium ferric-oxide (normal-bias) tapes have been developed that yield equivalent performance in almost all situations.

Newest are metal tapes, which are coated with pure iron particles, not oxides. These offer substantially greater treble performance and are suitable for recording situations presenting high-level high frequencies, a rather rare situation in home taping but one encountered often in taping live music or dubbing digitally recorded discs. The price is also substantially higher, so metal has not caught on the way CrO₂ did when it was introduced. Metal tapes require a still higher bias—roughly twice that of a chrome tape—but use the same 70-microsecond playback equalization.

To the best of my knowledge, all ferric and CrO₂-type cassettes and many metal cassettes have standardized detector holes. The aim, as you suggest, is to simplify cassette use by letting the machine automatically do the necessary switching. Some
purists, however, demand fine-tuning bias adjustments to compensate for brand-to-brand differences among tapes of the same general type—the very opposite of simplicity. While such adjustments can improve performance marginally, for most users the improvements are not worth the bother.

Dolby Dubbing

Q. When dubbing a cassette encoded with Dolby-B, is it better to turn off the Dolby system in both decks (saving losses from decoding and then re-encoding) or to leave both Dolby circuits on? Also, I have some Dolby-C cassettes that I want to dub in Dolby-B using my Dolby-B deck as a playback source and my newer Dolby-B/C deck for recording. What would you recommend for the Dolby settings?

A. Although some audio writers recommend dubbing a Dolby-B-encoded tape with both decks' Dolby circuits turned off, this requires very careful attention (and probably several trial dubbings) to ensure that the recorded level on the source tape is identical to the recorded level on the copy. If that requirement is met (as a commercial duplicator can easily do using Dolby-level test tapes to set up his machines), it indeed makes no sense to decode and then re-encode when dubbing. But today's LED level indicators have a certain amount of plus-or-minus "leeway" in indicating the true level at a single LED, much less over several, and I think you could spend an inordinate amount of time in trial dubbings and still end up with level differences between tapes. Since the Dolby system is level-sensitive, turning both Dolby circuits off is likely to cause more frequency-response errors when decoding the dub than you would get if you followed the simple advice Dolby Labs has always given me: leave the Dolby system on in both the source and copying decks.

Regarding your other project, Dolby-B decoding a Dolby-C-encoded source tape (leaving untouched the encoding that affects the midrange) and trying to record that so the result would play back in Dolby-B, I say, simply, forget it. Sure, you'd like to use your new deck to make the recording, but there's just no way you can properly treat the frequency area that represents the difference between Dolby-B and Dolby-C. Dolby-B decoded twice does not add up to Dolby-C. So, use your new deck to decode the Dolby-C source completely, then re-encode in Dolby-B on the copying deck.

Tape Boxes

A letter printed in May's "Tape Talk" requested a source for empty replacement boxes for open-reel tapes. A number of readers sent in the names and addresses of suppliers that they have found satisfactory. The ones most commonly mentioned were Saxitone Tape Sales at 1776 Columbia Road N.W., Washington, D.C. [(800) 424-2490; (202) 462-0800] and Polylime Corp. at 1233 Rand Road, Des Plaines, Ill. 60016 [(312) 298-5300].
Achieve Mitsubishi in Tredia.
The sedan that conquered time and space.

It's here. A sedan that has it all. Room and comfort. And performance, too.

The Mitsubishi Tredia.

Let's talk about space and comfort. Tredia gives you a surprising amount of room. Enough for five people. Tredia has front-wheel drive. And the transverse-mounted engine means there's more interior room to stretch out and relax. Tredia also offers a unique U-shaped rear suspension system that allows more rear leg room than you'd expect in a car this size. That same suspension system allows Tredia to have a generous trunk with almost 10 cubic feet of space.

Tredia gives you the kind of road-handling and quickness usually associated with more expensive European touring cars. It has a highly advanced fully independent suspension system. Up front, MacPherson struts provide handling and agility. In the rear, the U-shaped suspension system helps reduce roll and puts maximum tire tread on the road for better handling and a smoother ride.

The Tredia L and LS come with a 4+4 Transmission that gives you a choice of two driving modes. There's also an ELC Automatic Transmission for the smooth crowd.

And then you have Tredia's engine. A 1.8 liter, 4-cylinder, MCA-Jet engine. It may be a four but it feels more like a six, thanks to a Mitsubishi Motors innovation called Dual Engine Stabilizers that helps smooth out the vibrations usually found in 4-cylinder engines.

Tredia offers exceptional value. It comes in three models. The Tredia, the Tredia L (Luxury) and the Tredia LS (Luxury Sport). It's just a question of how plush a life you want to live.

The luxurious Tredia L, shown above, is priced at only $7,259.*

Prices for the base Tredia start at just $6,539*.

Call (800) 447-4700 for the Mitsubishi Motors Dealer nearest you.

*Manufacturer's suggested retail price for Tredia and Tredia L. Actual prices set by dealers. Taxes, license, freight, options and other dealer charges extra. Prices may change without notice. Availability at dealers of vehicles with specific features may vary. Base model Tredia not available in California.
People who want to make an informed choice of hi-fi components usually begin by reading advertisements and test reports in magazines such as Stereo Review, visiting dealers to see and hear the actual equipment and receive advice from salespeople, and asking the opinions of friends who may have traveled the same route in the past. So far, so good. But most people do something else that is not always such a good idea—they compare specifications. Now don't get me wrong; as far as I'm concerned, the more people who can understand audio specifications the better. What bothers me is that some of these people simply compare numbers without understanding them or even knowing whether they can be compared. They are quite often comparing apples and oranges.

The assumption that component specifications are identical, or even similarly, arrived at merely because they have the same title is a poor basis for planning a home music system. There are at present no industry-wide standards for the measurement and specification of either phono cartridges or loudspeakers, two of the most critical components of a music system. (A cartridge test standard is, however, nearing completion by an EIA technical committee and may go into effect later this year.) We are more fortunate in the case of electronic components (tuners, amplifiers, receivers), since the applicable standards have been around for several years and are now almost universally accepted and used. Nevertheless, there are still some loopholes to be wary of. For example, tuner signal-to-noise ratios can be measured with either 65- or 85-dBf inputs according to the EIA (formerly IHF) standard. But the higher input level naturally produces a higher S/N figure than the lower one does.

To illustrate the problem further, suppose you are shopping for a cartridge and find two models whose frequency-response specifications are apparently identical, say, "20 to 20,000 Hz ± 3 dB" (if the tolerance is omitted from any frequency-response specification, view it with considerable skepticism or ignore it completely). Both have about the same rated output and track at about the same force. However, one lists for $75 and the other for $200. Since they are obviously almost identical, and it is reasonable to assume that both manufacturers are in business to make a profit, one of them is clearly trying to rip off the consumer while the other is offering a fair value. Right? Not necessarily! The available information is simply not sufficient to establish how similar or dissimilar the two products are or whether either one of them can be considered a reasonable value. A careful listening comparison might disclose significant audible differences, but it might not. Important cartridge specification that is now published by only a few manufacturers (but will be a part of the forthcoming EIA standard) is tracking ability—how high a recorded groove velocity the cartridge can track, at a given vertical tracking force, without mistracking or excessive distortion. This specification is somewhat analogous to the power rating of an amplifier, although with a cartridge one does not have the option of turning down the volume to prevent distortion on loud passages. If you play music only at low to moderate levels, a 10-watt amplifier is likely to sound just as good as a 200-watt amplifier played at the same volume since the maximum power demand may not exceed a couple of watts. Similarly, a cartridge that has no difficulty tracking the 5-cm/s velocities on easy-listening records might be useless on a symphonic record having a wide dynamic range and peak groove velocities exceeding 20 or 30 cm/s.

Very likely you will not be able to test a product's capability fully at the store, and perhaps not even at home during a brief trial. In such a case, the advice of someone you can trust could save you a lot of trouble and expense. When universal and meaningful standards become a part of phono-cartridge ratings, you should be able to draw more meaningful conclusions from specifications alone, but that time is not just yet at hand.

The situation is even worse with speakers, and in this case no relief is even in sight. There is no substitute for listening with your own ears when it comes to choosing a speaker. This should be done with the same sort of program material you expect to be using and, if at all possible, in your own home, since a speaker will sound different in every room in which it is used. If none of this is possible, read equipment reviews carefully and try to find a reviewer whose listening preferences seem to be similar to your own. If he says that a given speaker has a certain sound coloration, there is a fair chance (but no guarantee!) that you...
LED indicators and are very well designed both record-mute and pause, all have bright ten characteristic of solenoid-operated cas-sette deck offers the serious cassette record-ist nearly every performance feature imag-ınable, including Dolby-B, Dolby-C, and dbx noise reduction, together with a basic operational simplicity that bespeaks as high a level of human engineering as of electron-ic engineering. The Z-6000 has three sepa-rate heads (sendust for recording, ferrite for playback), permitting instantaneous check-ıng of recording quality. The dual-capstan transport uses a direct-drive d.c. servomotor for the leading capstan; the trailing capstan is belt-coupled. Separate direct-drive d.c. motors turn the take-up and supply-hub spindles, and a fourth d.c. motor operates the head assembly and pressure rollers, eliminating the jarring “clack” that is so of-ten characteristic of solenoid-operated cas-sette decks.

The transport-mode buttons, including both record-mute and pause, all have bright LED indicators and are very well designed for light, positive operation. Cassette inserts are inserted, tape openings downward, into the usual slides on the back of the highly damped cassette-well door, which is easily removed for routine head cleaning and demagnetization. The well itself is illuminated, and the clear door provides full visibility of the cassette inside. A pitch control with a very wide range (+13.6 to -11 per cent in our measurements) is pushbutton-selectable. At first glance the Z-6000's array of twenty-four pushbuttons to the left of the cassette well appears formidable indeed, but a sensible arrangement makes their func-tions easy to learn. In the top row are but-ton for various memory operations (rewind to stop, to play, or to repeat a chosen sec-tion); a COMPUTOMATIC PROGRAM SEARCH (CPS), which allows skipping forward or back by up to nineteen selections (the num-ber chosen is displayed on a digital readout) by automatically detecting 4-second blank spaces between them; and an INTRO CHECK, which plays about ten seconds of a selection and then, unless the play button is pressed, skips to the next selection and repeats the process. The buttons in the second row set the digital tape counter, which conveniently reads elapsed time in minutes and seconds (even in the fast-wind modes) for C-46, C-46L (large hub, a format used in Japan), C-60, or C-90 cassettes.

The fourth row of buttons allows the user to choose no noise reduction, Dolby-B, Dolby-C, or dbx; indicator lights on the display panel show which system is in use. The fifth row is marked INPUT. Buttons allow selec-tion of either line or microphone inputs or decoded playback of a dbx-encoded disc. Another button in this row inserts an FM-multiplex filter to prevent the Dolby noise-
Come to where the flavor is.

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


Kings: 16 mg "tar": 1.0 mg nicotine — 100's: 16 mg "tar:"
1.1 mg nicotine av. per cigarette, FTC Report Dec. '81
reduction circuits from mistracking if the tuner or receiver connected to the deck inadequately suppresses the subcarrier for stereo FM broadcasts. Pushbuttons in the bottom row are used to activate an external timer in recording or playback modes.

The Z-6000 uses two thirty-segment peak-reading level indicators, which are accurately calibrated from -40 to +10 dB. The use of 1-dB increments from -10 to +10 dB permits much more certainty about the actual signal level than more limited displays do. The highest peaks remain lit for about two seconds so that they will not be inadvertently missed. No specific marking for Dolby level is provided, but we found that the calibrated 0-dB level corresponded to the 250-nanowebere/meter reference level mandated by the forthcoming standards from the IEC (International Electrotechnical Commission) and the EIA/IHF (Electronic Industries Association/Institute of High Fidelity).

Appropriate recording bias and equalization as well as playback equalization for ferric, CrO2-type, and metal-particle tapes are automatically set using the detector cutouts on the rear of the cassette. While most users will be perfectly satisfied with the reference factory settings for these tape types, Teac has also provided an unusually flexible optimization system for those who wish to eliminate even the brand-to-brand (or batch-to-batch) variations within each tape type. Three built-in tone generators (500 Hz, 6,150 Hz, and 14 kHz) permit separate left- and right-channel adjustments for tape sensitivity, bias, and recording equalization using the deck's level display and a small screwdriver (supplied). The procedure takes only a few moments, at the end of which pressing the TEST TONE OFF button automatically rewinds the tape to where the process started. Although a number of decks provide similar optimization systems for sensitivity and bias, the Z-6000 is one of the few that permits separate adjustment of recording equalization. (Our only criticism of the system is that for some reasons the normal outputs from the deck are muted during the adjustment procedure, making it next to impossible to connect an external meter.)

Separate left and right slider controls and a smooth master slider determine the recording level and balance, and there are separate output controls for the main and headphone outputs. The front panel also contains jacks for headphones, microphones, and a (supplied) remote-control unit with a 15-foot cable. The main input and output jacks are on the rear panel. The Z-6000 measures 17 inches wide, 17 inches deep, and 6 1/4 inches high, and it weighs slightly more than 36 pounds. Price: $1,400. Teac Corp. of America, 7733 Telegraph Road, Montebello, Calif. 90640.

Laboratory Measurements. Our sample of the Teac Z-6000 was factory adjusted (in its reference position) for TDK AD (ferric), TDK SA (CrO2-equivalent), and TDK MA (metal), and we used these cassettes for our graphs and measurements. By using the optimizing procedure, however, we obtained almost indistinguishable results with premium cassettes from Maxell, Sony, and Fuji as well.

Playback response was measured using the BASF IEC standard calibrated alignment tapes, which now appear to be accepted in both Japan and the West. The slightly rising response below 100 Hz shown in the graph is the inevitable consequence of playing a full-track test tape with quarter-track stereo heads and represents a phenomenon called "fringing" that does not accurately indicate the bass response. Above 12.5 kHz there was a gradual rolloff in treble response to -3.5 dB (CrO2) and -4.5 dB (ferric) at the 18-kHz limit of the test tapes. This seems to represent nothing more than a very slight error in the deck's azimuth alignment.

Because the Z-6000 uses a higher "0-dB" reference level (the 250-nanowebere/meter IEC standard) than the still-prevalent 200-nWe/m Dolby level, the graph shows the high-frequency rolloffs for the 0-dB record-playback responses beginning at slightly lower frequencies than on some of the other top-quality decks we have measured in the past. This is definitely not a limitation of the Z-6000. The amount of treble energy that can be stored on a cassette is limited by the tape formulation, and the higher the recording level the lower the frequency at which tape saturation (and the consequent treble rolloff) occurs. If the higher IEC level prevails as a 0-dB reference point, the only necessary change in audiophile recording practice is to use a little more caution in letting level indicators go into the red.

The effect of the higher 0-dB level shows up on our overall -20-dB frequency-response curves as well. Here the response was a really excellent +2.5, —0.5 dB all the way out to 20 kHz with the metal tape, but it began to drop very slightly (~2 dB at 19 kHz) with the ferric and chrome-equivalent tapes. Lowering the nominal -20-dB recording level by just a couple of decibels would make the graphs look better, though the difference is certainly not audible.

(Continued on page 28)
HOW CAN SANSUI CLAIM THE WORLD'S ONLY DISTORTION-FREE RECEIVER?
SIMPLE. WITH SUPER FEEDFORWARD DC AMP.

Creating technological breakthroughs is nothing new to Sansui. One of our most recent innovations, the unique Super Feedforward DC power amplifier system routs all types of distortion—harmonic, intermodulation, transient intermodulation, switching—you name it.

And it's the reason we can claim that Sansui's new top-of-the-line, 120-watt* Z-9000 receiver is truly distortion-free.

Simply stated: the Sansui Super Feedforward circuit is the perfect marriage between negative feedback and feedforward. As a result, you're never bothered by any type of distortion. You hear precisely what's on the records, tapes and broadcasts. Nothing added, nothing lost—just pure music.

7-band graphic equalizer for greater tone control.

Unlike receivers with conventional two or three tone controls, the Z-9000 provides total flexibility with a state-of-the-art 7-band graphic equalizer that helps balance the sound in your listening room.

FIgURE (M1)

Improvement in Distortion with Super Feedforward System

Improvement with Super Feedforward

Improvement with Negative Feedback

Digital Quartz-PLL tuning is more precise.

While Super Feedforward alone is enough to outperform most receivers, the Z-9000 adds the pinpoint accuracy of drift-free digital Quartz-PLL tuning. To make sure it's as easy to use as it is precise, there's microprocessor-controlled pushbutton pre-selection of eight FM and eight AM stations. Plus automatic scanning to recall each preset station at the previously programmed volume level. Each time you touch the tuning button you can scan or go up and down the FM and AM bands, bringing in perfectly tuned stations even when they're a hairline away from each other.

Extras add more pleasure to your listening.

The Z-9000 is loaded with high technology refinements that let you experiment with sound the way no other receiver can.

The built-in reverb unit with its own display can make your finest tapes and recordings sound even more magnificent by adding natural depth, extra brilliance and sound realism. The exclusive quartz/timer clock with three independent memory functions can be programmed to wake you up, lull you to sleep, and tape a broadcast in your absence. There are also high- and subsonic filters and a preamp that handles both moving magnet and moving coil cartridges.

If the new distortion-free Sansui Z-9000 sounds too good to be true, satisfy yourself with an audition at your audio specialist. Or write today for additional details.

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20 watts per channel minimum RMS into 8 ohms, 20Hz to 20kHz
with no more than 0.05% total harmonic distortion.
Using a 315-Hz test tone, third-harmonic distortion at the 250-nWb/m 0-DB reference level measured 1.6 per cent for TDK AD (ferric) and MA (metal), 0.9 per cent for TDK SA (CrO₂-equivalent). To reach 3 per cent third-harmonic distortion required an output level of +1.9, +3.5, and +2.6 dB, respectively, for the same tapes. Referred to the 3 per cent distortion level, the unweighted signal-to-noise ratio (S/N), with no noise reduction, measured 54.7, 56.7, and 54.2 dB for the three tapes. Using Dolby-B noise reduction and CCIR/ARM weighting increased the figures to 65.8, 66.8, and 65.8 dB, and with Dolby-C and IEC A-weighting S/N's of 68.4, 71.2, and 71.5 dB were realized.

The dbx noise-reduction system gave even more impressive S/N results. Because dbx is a 2:1 compressor-expander, a signal that reaches 0 dB on the level indicator is actually recorded at a considerably lower level, resulting in less distortion. The nominal third-harmonic distortion of TDK AD at a nominal 0-DB record level was only 0.44 per cent, with SA and MA cassettes measuring only 0.33 and 0.42 per cent. To reach 3 per cent distortion required driving the meters off the scale to +11.2, +15.1, and +13.1 dB! Unweighted S/N's with dbx were 80.6 dB (AD), 86.8 dB (SA), and 85.3 dB (MA), and with A-weighting they measured 85.4, 91.6, and 90 dB, which approaches the range of digital recording.

The Z-6000's excellent transport design is shown by its measured wow-and-flutter of 0.022 per cent (rms) and 0.034 per cent (DIN peak-weighted), using our Teac MTT 111 test tape. Dolby tracking error at -20- and -30-DB levels was within ±1 dB with Dolby-B and ±2 dB with Dolby-C. A line-input signal of 87 millivolts (0.087 volt) was required to produce a 0-DB record indication, which corresponded to an output of 0.38 volt. Microphone input sensitivity was 0.37 mV, and microphone overload was reached at a 40-mV level—typical figures for high-quality decks today. With the pitch control turned off, the Z-6000 ran a negligible 0.2 per cent fast. Fast-forward and rewind times for a C-90 cassette measured 113 and 108 seconds; a C-60 took 76 and 74 seconds, respectively, which is somewhat faster than average.

**Comment.** It is clear from our measurements that the Teac Z-6000 can faithfully record and play back any program source—including dbx-encoded discs and Compact Discs—that an audiophile is likely to present it with. As long as we kept the record level from going into the red, there was no diminution of treble response, and we failed to detect any misbehavior ("breathing") by the dbx noise-reduction system. Dolby-B does not sufficiently eliminate hiss for the most critical applications. Dolby-C is essentially perfect in this respect, but on the Z-6000 we appreciated the dbx system even more. On prerecorded Dolby-B-encoded tapes we did detect a very mild dulling of treble sheen in comparison with our reference deck, but a very slight turn of the treble control was sufficient to restore it.

Perhaps as important, the Z-6000's solid construction gives promise of a long useful life, and the deck is extremely easy to operate. The separate left and right record-balancer controls and the playback controls were a little awkward to use, though the master record control was sensuously smooth. The light bulbs in the cassette well generate some heat, and cassettes that have just been played come out of the well slightly warm to the touch, but this is certainly not likely to cause any difficulty. The motor system is exceptionally quiet, even in fast-winding modes, and the panel layout is elegant not only in style but in feel. In sum, the Teac Z-6000 is one of the very finest cassette decks it has been our pleasure to test, and we can recommend it to the serious audiophile without reservation.

—Craig Stark

**Circle 140 on reader service card**

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**Acoustic Research AR8B Speaker System**

The two-way AR8B is the smallest and least expensive speaker system in the current Acoustic Research line. Like all AR speakers, it is an acoustic-suspension model, and it has a newly designed 6-inch woofer that crosses over at 2,000 Hz to a 1¾-inch "liquid cooled" cone tweeter. (The tweeter presumably uses ferrofluid or a similar material to damp and cool its voice coil.) The crossover network has been simplified and its cost reduced by designing each driver to have a natural rolloff outside its operating frequency range. As a result, only a capacitor is needed to protect the tweeter against damage from powerful low-frequency signals. The effective crossover slopes are 12 dB per octave for the woofer and 18 dB per octave for the tweeter.

The drivers of the AR8B are vertically aligned in a cabinet measuring 14¾ inches high, 9½ inches wide, and 6¼ inches deep...
Buff Stuff from TDK.

You, the audiophile, are the toughest critic we know when it comes to sound performance. You're very selective in deciding the perfect equipment for your recording and listening needs. And you're just as selective in choosing your recording tape. TDK knows that. So we developed a line of high performance audio cassettes that meet your critical requirements.

We call it the TDK Professional Reference Series.

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 die-cast metal frame.

The TDK Professional Reference Series... it'll sound impressive to your ears. So share the pleasure with your friends—they'll appreciate it.
The specifications of the AR8B include a sensitivity of 88 dB sound-pressure level (SPL) at 1 meter with a 2.83-volt input (1 watt into the speaker's nominal 8-ohm impedance) and a system frequency response with half-power (-3 dB) points of 74 and 22,000 Hz. The AR8B has no external frequency-balance or level controls. It is recommended for use with amplifiers delivering between 10 and 75 watts per channel. The AR8B is packaged and sold in pairs. Price: $179.98 per pair.

**Laboratory Measurements.** Both our room-response and anechoic (FFT) frequency-response measurements of the AR8B showed a slightly depressed output at 4,000 and 15,000 Hz relative to the midrange response. The close-miked woofer response, however, was quite flat, with a maximum output at about 150 Hz; the output fell to -3 dB at 1,500 and 95 Hz, and it continued downward at 12 dB per octave below the resonant frequency. The composite frequency-response curve was flat within ±1.5 dB from 100 to 4,000 Hz, down by as much as 4 or 5 dB between 4,000 and 15,000 Hz, and up 4 dB at 20,000 Hz (relative to the 1,000-Hz level). The overall response variation between 85 and 20,000 Hz was only ±4 dB. The anechoic axial response as measured with our IQS FFT-analysis system was generally very similar, except that the analyzer's internal filter attenuated the response somewhat above 17,000 Hz. The tweeter dispersion was very good up to 10,000 Hz, but in the upper part of the next higher octave the response at a 45-degree horizontal angle to the speaker axis was down by as much as 12 to 15 dB.

The phase response of the AR8B was very linear with frequency, resulting in a group delay that varied only about ±0.2 millisecond from 1,000 to 20,000 Hz. The system impedance was between 5 and 8 ohms over almost the entire audio range, reaching a maximum of 16 ohms at the system's bass resonance frequency of 100 Hz. The measured sensitivity was higher than rated, with 2.83 volts of input producing a 92.5-dB SPL at 1 meter on the speaker axis. The woofer distortion with a 1-watt input was low, increasing smoothly from 0.6 per cent at 100 Hz to 2.8 per cent at 60 Hz. With 10 watts input, the distortion rose from 2.8 per cent at 100 Hz to 15 per cent at 60 Hz.

**Comment.** Our measurements showed that, within the inherent limitations of its 6-inch woofer diameter and compact overall dimensions, the AR8B is a remarkably good sound reproducer. This was completely confirmed by listening tests. Placed against the wall about 9 feet apart and 28 inches above the floor, our sample pair of AR8B's filled the room with a sound that totally belied their size and price. Obviously, they cannot play as loudly as many larger speakers or shake the room with their bass output. On the other hand, the natural roll-off of the AR8B's low-bass output prevents it from generating a lot of audible "pseudo bass" (which is really distortion). We never felt the need to push the speakers to unreasonably high volume levels, perhaps because their sound was so well balanced.

Although it is hardly reasonable, we could not resist making an A/B comparison between the AR8B system and our reference speakers, which cost about fifteen times as much. Strange as it might seem, the similarities between their tonal characteristics far outweighed the differences. This is not to suggest that they are in any way equivalent speakers but only that a flat, reasonably well-dispersed output from 100 to 20,000 Hz is a key to good high-fidelity reproduction, and these two very different systems share that property. Once you have met that basic requirement, it is the refinements—such as extended response at both ends of the frequency spectrum, higher power-handling ability, and different dispersion patterns—that distinguish most speakers from each other and are responsible for much of the price differences between them.

It is not really surprising that AR has made another good speaker—the company has been doing that for nearly thirty years. Nevertheless, the small size and low price of the AR8B make it a very attractive choice for budget-priced systems and installations where space is limited. This speaker proves that there is no need to sacrifice good sound because you don't have a mansion-sized music room or a $10,000 stereo budget.

—Julian D. Hirsch

Circle 141 on reader service card

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**Test Reports**

(AR8B) is played back by a tape deck connected to its jacks.

A dynamic expander is essentially a variable-gain amplifier whose amplification is proportional to and controlled by the amplitude of the incoming signal. Since virtually every recorded or broadcast signal has undergone some compression (quieting the loud parts while making the quiet parts louder), a well-designed expander can help restore a more natural and open quality to the reproduced sound. But since there is no way for the listener to know what compression characteristic was used, an expander must be adjusted by ear for the most pleasing results.

A single-band expander, in which the gain varies uniformly for all frequencies in accordance with the total signal level, often creates audible side effects. A strong bass signal, for instance, can unnaturally vary the levels of higher-frequency signals, and

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**dbx 4BX Dynamic-Range Expander**

The dbx Model 4BX three-band dynamic-range expander features an "impact restoration" circuit and a wireless (infrared) remote control that duplicates all of its expansion controls and most of the front-panel function switches. The 4BX is normally connected to the tape input and output jacks of the system amplifier, and it duplicates their functions on its rear apron. It also has front-panel controls to expand a signal either before it is recorded or after it

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The AR8B model 4BX, a dynamic-range expander, is reviewed. It includes features such as an impact restoration circuit and a wireless (infrared) remote control that duplicates the front-panel function switches. The review highlights its performance characteristics, including frequency response, phase response, and sensitivity.
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 an unprecedented 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—intended by the musicians and recording engineers to be heard with your own two ears.

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.
the dynamic-gain variations sometimes modulate the background noise and create audible swishing sounds or pumping effects. In the 4BX, the gain in each of its three frequency bands (below 150 Hz, from 150 to 6,000 Hz, and above 6,000 Hz) is separately determined by the signal level in that band. Combined with a careful selection of the operating time constants (which control the rates at which expansion is applied and released), the use of multiple bands essentially eliminates the usual audible indications that an expander is being used.

The dbx 4BX is turned on by a momentary pressure on its POWER ON/MUTE button. Initially, the volume setting at turn-on is -40 dB (nearly off), and nothing will be heard unless the 4BX's POWER ON/MUTE button is pressed again. This increases the volume to -15 dB or whatever other level it was at before the unit was last turned off. The volume is smoothly adjustable thereafter by two buttons (identified by arrows), one to increase and the other to decrease; a column of red LED's above these buttons indicates volume levels from -30 to +10 at -10 dB intervals. After the unit is turned on, the POWER ON/MUTE button functions as a muting switch; pressing it alternately changes the gain between the set listening level and the -40 dB mute level. There is a separate front-panel button for turning the unit off.

Another pair of up/down buttons controls the degree of expansion, which ranges from 10 per cent (an output/input slope of 1:1) to 50 per cent (1.5:1). The selected setting is shown by another column of LED's above the buttons. Similar controls and indicators set the TRANSITION LEVEL (at which the expansion condition is shown by another column of LED's above these buttons) and the transition level. When none of the lights in a row is glowing, the expansion gain is 0 dB in that frequency band is unity. A fourth row of red LED's shows the effects of the impact-restoration circuit.

The remaining buttons are for source and tape selection, PRE and POST equalization of recorded signals, and BYPASS. The last circuits; pressing it lights a red LED and simultaneously extinguishes all of the GAIN CHANGE indicators. Finally, there is a vertical slider control marked DISPLAY that dims them entirely at its lower limit.

The dbx 4BX is about 18 inches wide, 12 1/2 inches deep, and 3 1/2 inches high. It is finished in black with silver panel markings. The remote control, also black, is about 5 1/2 inches long, 2 inches wide, and 1 inch thick; it is powered by a 9-volt battery. Price: $799. dbx Inc., 71 Chapel Street, Newton, Mass., 02195.

- Laboratory Measurements. We were able to confirm most of the specifications of the dbx 4BX. Only the noise level (specified as 90 dB below 1 volt, A-weighted) was beyond the range of our instruments. We measured over the full range of the volume and expansion settings; it was typically -78 unweighted and well below our -80 dB measurement limit with A-weighting. The amount of expansion was essentially as rated in each band and for the impact-restoration circuit. The transition level could be set well beyond the rated limits of 30 to 300 milliseconds in the middle frequency band (we measured a range of 20 to 1,600 milliseconds at 1,000 Hz).

The 4BX was tested with a standard IHF load of 10,000 ohms in parallel with a capacitance of 1.000 picofarads. The 1,000-Hz output clipped at 7.2 volts, and the harmonic distortion varied from 0.007 per cent at 0.1 volt output to 0.08 per cent at 5 volts (the rated maximum is 0.15 per cent). The frequency response at the minimum expansion setting (10 per cent) varied less than 0.5 dB overall from 20 to 20,000 Hz (considerably better than the rated ±0.5 dB). As expansion was increased, the response varied only slightly up to about 5,000 Hz (about ±2 to 3 dB at 50 per cent expansion) but rose at higher frequencies to a plateau of ±5 to +10 dB, relative to the lower frequency level, in the octave from 10,000 to 20,000 Hz. The overall level also increased by as much as 10 dB at maximum expansion. The high-frequency transition level was adjustable with a rear-panel control in order to vary the balance between the very high frequencies and the rest of the spectrum. We used the factory setting for our measurements and listening.

To determine the degree of isolation of the three operating bands of the 4BX, we measured the output level changes at 3,000 and 10,000 Hz. In the maximum signal condition (0 dB), all the red lights were on in the low-frequency display, indicating a full 12-dB expansion of the 100-Hz signal. From the maximum down to -30 dB (the transition level), the expansion slope was approximately the indicated 1.5. Below -30 dB, the slope was 1.0 (a linear transfer characteristic). Neither of the high-frequency signals changed by more than a decibel or so over the full measurement range, which encompassed a change of about 80 dB in the 100-Hz output signal.

The expansion time constant was checked with a 1,000-Hz tone-burst signal. The output burst reached its full amplitude in about 4 milliseconds at the maximum 1:1 expansion. Switching in the impact-restoration circuit initially gave about 12.7 dB additional expansion, which was maintained for about 100 milliseconds and then dropped back to its steady-state value over a period of about 0.8 second (the rate of this decay can be adjusted on the rear of the unit).

- Comment. Measurements of a dynamic signal processor can verify the manufacturer's statements concerning its operation parameters but tell us little about its subjective listening effects. To determine this we must use the device in listening tests. We have used a number of dynamic expanders over the years, most of them single-band units. Their overall success in achieving a worthwhile degree of expansion without obvious and undesirable side effects has varied widely, depending largely on the skill with which the designers selected the operating parameters but tell us little about its subjective listening effects. To determine this we must use the device in listening tests. We have used a number of dynamic expanders over the years, most of them single-band units. Their overall success in achieving a worthwhile degree of expansion without obvious and undesirable side effects has varied widely, depending largely on the skill with which the designers selected the operating parameters but tell us little about its subjective listening effects. To determine this we must use the device in listening tests. We have used a number of dynamic expanders over the years, most of them single-band units. Their overall success in achieving a worthwhile degree of expansion without obvious and undesirable side effects has varied widely, depending largely on the skill with which the designers selected the operating parameters.
The goal in designing the Mercury Topaz was simple: When the driver takes the wheel and touches the accelerator, the car should respond. Instantly.

The way Topaz accomplishes this is by integrating a remarkable combination of driving and handling tools in a 5-passenger car. Power brakes, front-wheel drive for traction and rack-and-pinion steering for precise control are all standard.

Its new 2300 HSC engine utilizes High Swirl Combustion technology for smooth, responsive power, particularly in stop-and-go situations. The engine is linked to an on-board EEC IV computer that's capable of processing 1,000,000 engine commands per second for smooth operation.

The handling is enhanced by a fully independent suspension system with front and rear MacPherson struts which help isolate shock from the driver, while still giving a superb feel of the road.

The result of all this is a car that responds precisely to hills, curves and straightaways because it responds precisely to its driver.

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The 1984 Mercury Topaz. A car as advanced as those who will own it.

INSTEAD OF DWELLING ON HOW YOU’LL RESPOND TO IT, LET’S DISCUSS HOW IT RESPONDS TO YOU.

Get it together—buckle up.
thresholds and time constants. At best, some of these devices were quite good, but usually it was necessary to use relatively little expansion (1.2 or 1.3 at most) to retain a natural quality in the music.

Despite its seeming complexity, the 4BX proved to be very simple to use and adjust. The three-band design seems to be about optimum for minimizing audible hints of expansion; we never detected any pumping or noise modulation even at a full 1.5 expansion. The LED indicators provide a graphic and convincing display of the expander's operation at all times (and our measurements confirmed that their indications are valid), yet we were never audibly reminded that expansion was being applied. You might ask, why bother with expansion if you cannot hear it? To answer that question, simply press the 4BX's BYPASS button. As with virtually every other worthwhile signal-processing system (time delay, image restoration, etc.), if an expander's audible effect is blatantly obvious in use, then its degree of processing is excessive. Yet the difference in listening pleasure between using it and not using it should be obvious—and with the 4BX it certainly is. When the 4BX is properly adjusted, switching it out presents an immediate and unmistakable loss in musical naturalness.

The impact-restoration system of the 4BX also sets it apart from any of the other expanders we have used. Only rarely did we find even its maximum setting to be excessive, and it did add more "life" to most program material. In common with other expanders, the 4BX is at its best when used in moderation, but it is much more forgiving than most when used to its fullest. Like other expanders, the 4BX is effective both for reducing background noise at low program levels and for increasing peak levels. Although in most respects the 4BX is easy to use in a music system, there is one annoying aspect of its design. Because the unit "forgets" all previous control settings whenever its power input is completely disconnected, it should not be powered from the switched "convenience" outlets on a preamplifier, integrated amplifier, or receiver. The complete and well-written manual explains the reason for this restriction: sudden level changes of 30 dB or more could be encountered with certain control settings if the expander were turned on and off by a switched outlet. One can, of course, simply use an unswitched outlet or connect the unit separately to a wall outlet, leaving it "powered" at all times and activating or de-activating its functions with the front-panel POWER ON/MUTE and OFF buttons.

The dbx 4BX is the most sophisticated dynamic expander for home music systems that we have used. It is also, by a comfortable margin, the best—and the most expensive. Clearly, it is not for everyone, since many users with modest systems would be better advised to invest the same money in better speakers or other components. But for those who already have top-quality components and who have no prejudice against manipulating a program's dynamics, the 4BX could be an ideal choice for making one more step toward sonic perfection.

—Julian D. Hirsch

Circle 142 on reader service card

Koss K/20 Headphones

The Koss K/20 is a lightweight, non-seal stereo headphone that provides exceptional sound quality at a budget price. Each earpiece contains a 1/4-inch dynamic (moving-coil) driver with a low-mass PVC diaphragm. The drivers are covered by thin, replaceable (and washable) foam ear cushions, and they can be repositioned on the curved single-piece plastic headband for a comfortable fit. Lightweight connecting wires from each earpiece form a Y with the 8-foot cord, which has a standard 1/4-inch stereo phone plug. The headphones weigh only 2 1/2 ounces without the cord, 4 1/4 ounces with it.

The Koss K/20 phones have a rated sensitivity of 100 dB sound-pressure level (SPL) at 1,000 Hz, the total harmonic distortion is rated at less than 1 per cent. The headphones' rated impedance (essentially resistive) is 110 ohms, and their frequency response is given as 18 to 20,000 Hz (no tolerance stated). Price: $19.95. Koss Corp., 4129 North Port Washington Avenue, Milwaukee, Wis. 53212.

- Laboratory Measurements. Measured using our standard headphone test coupler, the Koss K/20 had a wide, smooth frequency response that was superior to many far more expensive headphones we have measured. There was a broad mid-bass emphasis centered between 150 and 200 Hz. The response fell off at about 6 dB per octave below 150 Hz and above 200 Hz, reaching a plateau in the 500- to 2,000-Hz range. Above that plateau there were the usual response irregularities typical of headphone-coupler measurements (though they were much less prominent than usual). The output remained strong up to 15,000 Hz and fell off rapidly above that frequency. Coupler measurements are inaccurate and unreliable at such high frequencies, but the K/20's overall measured response of +9, -4 dB from 38 to 15,000 Hz attests to its fine performance.

With a 1-volt drive signal, the 1,000-Hz SPL was a loud 104 dB (and an ear-rattling 113 dB at 150 Hz). The 1,000-Hz harmonic distortion was only 0.5 per cent at this level. The measured impedance was between 120 and 140 ohms from 20 to 9,000 Hz, rising smoothly to 190 ohms at 20,000 Hz.

(Continued on page 38)
No noise is good noise.

Teac hates noise. So we've quietly gone about our business of stamping it out. Our new Z-6000 cassette deck has not one noise reduction circuit, but four. Both Dolby B and Dolby C NR, plus the added benefits of dbx and dbx disc. Features usually found only on professional equipment, now standard with Teac. So your Z-6000 will never meet a tape it doesn't like.

You can make a tape that will play on any other machine. And you can play anyone else's tape on yours. Without a lot of hiss and distortion to get in the way.

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For your nearest Teac Dealer call us direct at (213) 726-0303.
Comment. We knew from first hearing the Koss K/20, even before making any measurements, that it was a true high-fidelity headphone having a smooth, wide, and peak-free response with no obvious distortions or other irritating qualities. This is a sensitive phone that should be adaptable for use with the popular personal stereo tape players and radios, as well as in conventional home systems. The K/20's light weight lets it be worn for extended periods without discomfort. Like any supra-aural headphone, the K/20 does not muffle ambient sounds to any great extent, and its own acoustic output may be audible a few feet away if it is played at high volume. This small disadvantage is more than offset by these headphones' wearing comfort and high-quality sound, which are typical of supra-aural phones at their best. And the advantages come at an impressively low price.

—Julian D. Hirsch

Sherwood ST-905 Turntable

Sherwood's ST-905 is a fully automatic record player with a two-speed, quartz-locked direct-drive turntable and a servo-driven linear-tracking (tangential) tone arm that takes a P-mount plug-in cartridge. All the operating controls are on the front of the turntable base so that they are accessible with the plastic dust cover lowered.

The full-size cast-aluminum platter (2 3/4 pounds with its rubber mat) is turned at 33 1/3 or 45 rpm by a frequency-generator-controlled direct-drive motor. Stroboscope dots cast into the underside of the platter and illuminated from below are visible through a window on the front of the base; they show a stationary pattern when the turntable is rotating exactly at the selected speed.

The straight, low-mass tone arm is mounted on a carriage that is moved along a rail by its own d.c. servomotor. The arm is also horizontally pivoted and free to move through a small angle in the plane of the record surface. Slight deviations from perfect tangency to the groove cause an interruption between an infrared light source and its sensors. This sends a corrective signal to the servomotor, which moves the arm so as to reduce the error. The arm servo can operate in either direction, permitting it to follow eccentric records. The arm is statically balanced by a counterweight that is factory set for the standardized 6-gram weight of a P-mount cartridge.

All the operations of the Sherwood ST-905 are controlled by pushbuttons for the quartz-wheel-vernier pitch control. Pressing the QUARTZ button engages a quartz-lock circuit that maintains the turntable speed at exactly 33 1/3 or 45 rpm. Releasing the button allows the speed to be adjusted over a nominal ±4 per cent range with the vernier wheel. Momentary-contact buttons, with lights to identify their settings, select turntable speed and record-size indexing for 7- or 12-inch discs. Setting record size automatically sets the speed to either 45 rpm (7-inch) or 33 1/3 rpm (12-inch), but the speed can be changed after the turntable starts to accommodate 12-inch 45's or 7-inch 33 1/3's.

The turntable's servo-driven tone arm cannot be moved manually, so two pushbuttons (labeled with horizontal arrowheads) are provided to move the arm in either direction through its motor system. Pressing either of these buttons lifts the pickup from the record. A light pressure causes the arm to move slowly; increasing the pressure causes it to move faster. When the desired arm position is reached, the cue button (labeled with vertical arrowheads) must be touched to lower it. At any time during play, the cue button can be used to raise or lower the pickup. The REPEAT button causes a record to be replayed indefinitely until it is pressed again. Finally, the START/REJECT button initiates the automatic operating cycles of the ST-905. One touch starts the motor, indexes the arm to the lead-in groove, and lowers it to play the record. A second touch raises the pickup, returns it to its rest, and shuts off the motor. (This sequence occurs automatically at the end of a record side even during manual operation.)

The Sherwood ST-905 has a silver-colored plastic base and a clear plastic dust cover. It measures about 15 inches wide, 13 3/4 inches deep, and 4 1/2 inches high, and it weighs 17 3/8 pounds. Price: $249.95. Sherwood, 17107 Kingsview Avenue, Carson, Calif. 90746.
player. The operating speeds were exact when we used the quartz lock and could be varied over a range of about +10 to −7.5 per cent using the vernier control. The weighted-rms flutter was 0.08 per cent, the weighted-peak flutter ±0.13 per cent; the flutter spectrum was confined to the range below 10 Hz. The unweighted rumble was a low −37 dB; with A.R.L.L. weighting the rumble was −60 dB, most of it occurring between 8 and 16 Hz.

The tone arm and cartridge resonated at about 11 Hz, and their combined effective mass was 11.5 grams. Subtracting the 6-gram weight of the cartridge showed that the arm mass was a very low 5.5 grams (this is one of the major advantages of most linear-tracking tone arms). The ST-905 was excellent at tracking warped records, the most direct benefit of a low-mass arm system. The rubber mounting feet isolated the turntable from conducted vibration quite well, with transmission through the base largely in the 25- to 50-Hz range.

The automatic-cycle times of the ST-905 were considerably shorter than those of most record players we have tested. The stylus reached the lead-in groove only 4.5 seconds after the start/Reject button was pressed, and about the same time was required for the motor to shut off after the pickup reached the locked groove at the end of the record. Pressing the button again while the arm was closer to the outer edge of the record reduced the shut-off time to as little as 2 seconds. The manual slewing rates, using the two horizontal-cueing buttons, were about 5.5 seconds per inch in the slow mode and 1.1 seconds per inch in the fast mode.

The cueing system worked very rapidly (less than 0.5 second for either lifting or lowering the arm), but the arm shifted outward slightly each time it was raised, causing about 7 seconds of the record to be repeated in each up/down cueing cycle.

**Comment.** The record-playing performance of the Sherwood ST-905 was excellent. Once a record is placed on the turntable and the cover is lowered, there is no need to raise the cover except to change records. The control operations are easy and free of quirks (unless one requires absolutely exact up/down arm motion during cueing). Although its control buttons require very little pressure, the ST-905 is so light in overall weight that on a slippery surface it tends to slide backward when some of the controls are operated. If necessary one can restrain the unit’s base with one or more fingers while pressing the control buttons.

The ease of setting up a turntable that uses a P-mount cartridge is a very desirable feature, especially since one can choose from a wide variety of cartridge makes in all price and performance ranges. The essential performance of this record player should be much the same whichever P-mount cartridge one selects. The ST-905 is attractively styled and priced just above the least expensive linear-tracking turntables. It is an excellent value, and it would be hard to name any worthwhile feature that it lacks.

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**JULY 1983**

Circle 144 on reader service card

**TENNESSEE**

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For some years critic Richard Freed, a contributing editor of Stereo Review, has listened to all available recordings of the nearly two hundred symphonic works that form the essential core of orchestral programs and classical record collections, selecting those versions he considered the best. We have published his choices in a pamphlet, which we have updated annually, and we are now publishing his selections of the best current recordings of the Basic Repertoire in a regular series in the magazine. If you want the pamphlet, the most recent updating (1982) is available for $1 (check or money order) and a stamped envelope; send to Basic Repertoire, P.O. Box 506, Murray Hill Station, New York, N.Y. 10156.

All the selections are two-channel analog stereo discs unless otherwise indicated by one of our usual symbols: () for a digitally mastered analog disc, () for a digital Compact Disc, () for a stereo cassette, and, in a few instances, () for a mono recording.

**BRUCKNER: Symphony No. 7, in E Major.** I prefer Karajan’s remake (DG 2707 102, @ 3370 023) to Haitink’s (Philips 6769 028, © 7699 113), but I’d be happy with either. Günter Wand is fiery and compelling, but he omits the cymbal clash in the slow movement (Pro Arte 2PXLC-2010, © 2PXPC-2010).

**BRUCKNER: Symphony No. 8, in C Minor.** The greatest of Bruckner’s complete symphonies receives one of the greatest of all Bruckner recordings in the new one by Carlos Paitya and his hand-picked London orchestra (Lodia @ LOD 783/4, © LOC 783/4). Karajan’s (DG 2707 085, © 3370 019) and Wand’s (Harmonia Mundi 1C 153 99853) are splendid too, but neither quite matches Paitya’s unselfconscious sense of momentum, and their sonics are still farther from matching what Lodia has achieved.

**BRUCKNER: Symphony No. 9, in D Minor.** Karajan’s economical remake (DG 2530 828, @ 4RL-32059) is regarded by many as superior to his more spaciously recorded remake (DG 2530 828, © 4RL-32059). Haitink’s digital remake is splendid (Philips 6514 191, © 7337 191). Günter Wand’s recording glows with intensity and conviction and has the advantage of an uninterrupted scherzo (Pro Arte PAL-1058, © PAC-1058).

**CHOPIN: Piano Concerto No. 1, in F Minor.** Emanuel Ax, a most poetic Chopin player, has given us a surpassingly beautiful recording with Ormandy (RCA © ATC1-4097, @ ATK1-4097). The Zimerman/Giulini recording is still attractive, as are the older and more economical ones by Polini/Kletzki (Seraphim S-6006, © 4XL-60066) and Giels/Ormandy (Odyssey Y 32369, © YT 32369).

**CHOPIN: Piano Concerto No. 2, in F Minor.** The recordings by Ax and Ormandy (RCA ARL1-2868, © ARK1-2868) and Arrau and Inbal (Philips 6500 309, @ 7300 110) realize the essence of this evocative work to the fullest. The Ashkenazy/Zinman (London CS 6440, © CSS 6440) and Rubinstein/Wallenstein (RCA LSC-2265) are especially elegant too.

**COPLAND: Appalachian Spring.** Leonard Bernstein’s extremely sympathetic performance of the famous concert suite, even more appealing than Copland’s own recordings of it, is available now in six different CBS collections: MS 6355; MG 30071, © MGT 30071; MY 37257, © MYT 37257; MS 7521, @ 16-11-0318; MG 31155; and © MGT 38519 (“The Copland Album” in the company’s cassette-only Classical 90’s line). Copland himself has also recorded the complete ballet score in its original chamber-orchestra version (CBS M 32736, © MT 32736).

**COPLAND: Billy the Kid; Rodeo.** Copland as conductor is at his best in his recording of these two ballet suites (CBS M 30114, © MT 30114). Bernstein’s versions are also first-rate (CBS © MGT 38519; MY 36727, © MYT 36727), and Morin Gould’s include additional material from both ballets (RCA AGM #130 © AGK1-1335). Dorati’s new Rodeo, coupled with different Copland pieces, is also stunning (London © LDR 71047, © LDR 5 71047).

**COPLAND: Lincoln Portrait.** Adlai Stevenson, heard with Eugene Ormandy conducting on CBS MS 6684, remains the only narrator to realize in full the simple dignity of the text Copland devised for this work—a virtually unsurpassable presentation. Nothing on tape at present.

**DEBUSSY: The Afternoon of a Faun.** Ormandy’s new CBS recording is probably still the most enticing but comes only in a two-disc set now (MG 30950). Herbert von Karajan’s seductive remake is one of the best (Angel S-37438, © 4XS-37438), or in Mobile Fidelity’s half-speed remastering, MPSF 1-513). Jean Martinon’s voluptuous account comes with some intriguing lesser-known Debussy (Angel S-37068, © 4XS-37068). The recordings by André Previn (Angel © DS-37674, 4ZS-37674) and Leonard Slatkin (Telarc © DG-10071) both benefit from gorgeous sound.

**DEBUSSY: Iberia (No. 2 of Images for Orchestra).** Iberia is best heard as centerpiece in the Images triptych, which is especially appealing as performed by the Amsterdam Concertgebouw Orchestra under Bernard Haitink (Philips 9500 509, © 7300 669). Martinon’s idiomatic performance is very interesting filer, Debussy’s Jeux (Angel S-37066, © 4XS-37066), and the fine sonics on Previn’s recording (Angel © DS-37674, © 4ZS-37674) make them strong contenders. On its own, Iberia is best served in the economical Fritz Reiner version (RCA Victrola VICS-1025).
Despite the fact that the Concord HPL-532 is ingeniously designed to fit everybody's car, it's definitely not for everybody. As Stereo Review said, Concord "...is truly an audiophile's car stereo."

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And wait until you hear the authentic high fidelity sound reproduction of the HPL-532. It delivers an impressive 12 watts per channel into 4 ohms 30-20,000 Hz with less than 0.8% THD.

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Of course at around $600 it's not inexpensive. But when you add up all its features you might say this. The difference is worth the difference.

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- Section maximum power: 25 watts/ch, Two-way power: 12 watts min, RMS per channel into 4 ohms, 30-20,000 Hz with 0.8 THD max, Four-way power: 5 watts min, RMS per channel into 4 ohms, 30-20,000 Hz with 0.8 THD max.
11

Digital Compact Disc Players

Stereo Review Tests

[Image of two men sitting in front of electronic equipment]
Lab tests of the first generation of digital disc players show that the future of audio is now at hand

By Julian D. Hirsch

For some time we have been hearing of the imminent arrival of the digital Compact Disc (CD) playback system jointly developed by Philips and Sony. (The name “Compact Disc” was coined by Philips analogously to the term “Compact Cassette,” a medium the company created and named more than twenty years ago.) Last October Compact Disc players were in production and, with a limited amount of software, went on sale in Japan, where they were very enthusiastically received. They are now available through selected dealers in the United States, and serious audiophiles will soon be able to decide for themselves whether the system lives up to its advance publicity.

These remarkable playback devices use a laser beam to scan microscopic pits on a plastic disc only 4¾ inches in diameter—which can hold more than a hundred one hour of music on its one playing side—while it rotates at a speed of 200 to 500 rpm. The system can provide a degree of sonic perfection that was inconceivable only a few years ago. Our appetites have been whetted by reading about the Compact Disc system’s ruler-flat frequency responses from 20 to 20,000 Hz, noise level below -90 dB, distortion of less than 0.01 per cent, and unmeasurably low flutter.

We have now been able to test and compare eleven representative CD players. The tests have been a challenging and fascinating experience requiring special digital test records and the most advanced instrumentation.

The Test Discs

We used test discs from Sony and Philips as well as a number of CD music recordings. Unlike analog test records, whose imperfections always affect (and frequently limit) the test results, digital test discs can be virtually perfect, since their test signals are computer generated with almost unbelievable purity. For example, the signals on the Sony YEDS 2 disc are said to be 99,999,999 per cent accurate!

Most of our tests were made with the Sony YEDS 2 and two Philips discs, identified as “Test Sample 3” and “Test Sample 4A” (henceforth TS3 and TS4A). The Sony disc has 1,000-Hz reference tones, at levels from 0 to -90 dB, for measuring distortion as a function of recorded level. Both it and the Philips TS3 have an “infinity zero” section, equivalent to the silent grooves on some analog test records, for signal-to-noise measurements. Among the YEDS 2’s many other “bands” (or selections, since a CD has no easily visible separation between its recorded segments), we used the one for channel-separation tests. This has signals at various discrete frequencies between 100 and 20,000 Hz recorded at a 0-dB reference level on one channel with an “infinity zero” signal on the other.

Although the Sony YEDS 2 has a frequency-response test section, it is recorded with discrete frequencies and has a lower limit of 100 Hz. We therefore preferred to use the Philips TS3 for this test, since it has separate 50-second frequency sweeps from 20 to 20,000 Hz for each channel. Our UREI graph plotter “tracks” this signal and gives a direct plot of the frequency response.

One of the TS3’s several intermodulation (IM) distortion test sections (the one with signals at 60 and 7,000 Hz at a 4:1 amplitude ratio) can be played directly into a standard IM analyzer for distortion measurement at levels of 0 and -20 dB. The TS3 also has square waves at various frequencies as well as numerous other transient and steady-state test signals. We used some, but not all, of these in our evaluation. We even tried to measure flutter using the TS3’s 3,150-Hz flutter-test tone, although the CD system is inherently free of flutter in any conventional sense.

We anticipated some problems in measuring the signal-to-noise ratios (S/N) of the CD players, since we expected these to be far below our usual measurement limit of about -80 dB. Fortunately, an Ivie IE-30A audio analyzer was made available to us for this purpose, and this amazingly compact and versatile instrument enabled us to measure S/N’s, both unweighted and with A-weighting, with ease and accuracy down to better than -100 dB.

Most other measurements were made with our standard test instruments, including our H-P 3580A spectrum analyzer, Crown IMA intermodulation analyzer, and others.

Error-Correction Tests

One of the most critical parts of a CD player is its error-correcting system. The very nature of a player’s operation—reading and processing the information conveyed by billions of microscopic pits on the disc’s imbedded signal surface—makes data errors unavoidable. An uncorrected mistake in reading only one “bit” of data (that is, one digit in a stream of binary numbers) can change the shape of the reconstructed analog audio signal, adding some amount of noise or distortion. While a single error would probably never be noticed, many thousands can be expected to occur during the playing of a single disc. Some of the worst of these can even disturb the laser’s tracking of the spiral pit pattern, causing it to “stick,” somewhat as a conventional stylus sticks in a damaged (“locked”) LP groove.

To prevent such problems, elaborate digital error-correction circuits are a key part of each CD player. Their effectiveness can easily be judged by the absence of noise, dropouts, distortion, or “groove locking” in the final audio output. But how do you quantify the capabilities of a player’s error-correction system? And what can be used as a test-signal source? Philips has helped answer these questions with its TS4A disc. This is basically a pressing of the TS4 disc, a musical sampler, with a wedge-shaped section of damage to its signal surface (the inner metal-coated layer). The information supplied with the test record indicates the physical length of the damaged area as a function of playing time (in minutes and seconds). By playing the record, listening for clicks, dropouts, or thumps, and noting the times of such occurrences, it is possible to determine the least amount of damage that exceeds a given machine’s error-correcting ability. Obviously, this is a vitally important specification for a CD player, but one that is unlikely to be published by any manufacturer—at least until complete test specifications for CD players are developed and universally accepted. History suggests this may require many years. Our quasi-objective measurements of error-correction performance using the TS4A disc were thus one of the most important parts of the test procedure.

(Continued on next page)
Another section of the TS4A disc has black dots of various diameters painted on its exterior surface where they can obscure the laser beam’s reading of the pit pattern. The effective length of the interruption caused by each dot is specified by Philips, and its effect is interpreted in the same way as previously described for the wedge-shaped damage. Finally, the disc has a simulated fingerprint formed by a grid of lines painted on the surface and spaced roughly the same as the whorls of a fingerprint. Much has been made of the CD’s presumed immunity to damage from fingerprints, and the TS4A allowed us to test those claims in a controlled manner.

Shock Tests

In addition to the error-correction tests, we attempted to judge the ability of each player to withstand physical shocks. As with conventional analog record players, the tracking of the spiral pit pattern can be disturbed by a blow or sometimes even just a tap on the case of the player. Lacking equipment for applying a calibrated impact to the cases, we dropped a 12-ounce ball of twine onto the top of each unit, increasing the height of the fall until the playing was audibly affected. The players are also sensitive to lateral shocks, and for this test we resorted to rapping the side of each case with increasing force until mistracking could be heard. The severity of the jolt that a given player could absorb before its laser scanner began missing the spiral of signal pits was translated into a letter grade (A, B, or C, in descending order of merit).

Other Measurements

Our electrical-performance measurements included the voltage output (and the maximum value if it was variable) into a standard IHF load from a 0-dB recorded level, the maximum unclipped headphone output level (where applicable) into loads of 600 and 8 ohms, and the 1,000-Hz total harmonic distortion (THD) and 1M distortion at recorded levels of 0 and -20 dB. The signal-to-noise ratio was measured as the difference, in decibels, between the outputs from the 0-dB at 1,000-Hz and “infinity-zero” portions of the Philips TS3 disc with and without A-weighting. Channel separation was measured both left to right and right to left at 1,000 Hz, with the two readings averaged for each frequency. The frequency response from 20 to 20,000 Hz was measured for each channel using an expanded amplitude scale (1 dB per vertical division) to reveal small deviations (see graph on page 52).

Using the Players

When a CD player is first turned on, the disc spins for a few seconds while the internal computer reads a digital table of contents recorded on the disc. After this operation, the player knows how many selections are on the disc and exactly where each one starts and ends. All the players we tested can start playing at any point on the disc, and all but the Sharp DX-3 and Sony CDP-101 can play any selections in any user-programmed order. In the absence of such programming, they play the disc from beginning to end (starting near the center and moving outward). The number of program steps that can be placed into the player’s memories ranges from fifteen for the Magnavox and Hitachi units to sixty-three for the Technics, with most able to accommodate from twenty to twenty-five. While some of the test records have up to thirty-nine selections, it is unlikely that any commercial CD release will contain even as many as fifteen.

All the players can be set to repeat an entire disc (or any selections within it) indefinitely. All of them can be cued “manually” (by means of pushbuttons) to the start of any selection and will display that selection’s number. In addition, some players allow the laser to be slewed to any point on the disc in a fast-forward or reverse mode. The Sony and Mitsubishi players even allow the program to be heard at a reduced level during the fast-speed slewing operations, with the musical pitch unchanged and only the tempo speeded up. Some music discs are recorded with internal indexing—special cueing points for, say, the subsections of a symphonic movement (exposition, development, etc.)—and a few players can also be cued to these index points. Some players also provide time cueing, in which the playing can be started (or stopped) at a stated number of minutes and seconds into a part.
You can sense it the moment you first see Cimarron's bold, contemporary road stance.
You can feel it the second you slip behind the wheel and into Cimarron's leather-faced lumbar-supported front bucket seats. And you can experience it every time you take to the open road.

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Great Taste with Low Tar. That's Success!

VANTAGE.
THE TASTE OF SUCCESS.
CD Players

ticular selection. Finally, several machines have a "phrase repeat" feature, permitting any desired portion of a program to be repeated by two successive operations of a function button. The repeated phrase can be as short as one second or as long as several selections.

Cueing Tests

The cueing accuracy of a CD player is entirely a function of its internal circuits and mechanism (there are no visible indications on the disc themselves that you could use for cueing even if you could move the laser scanner manually). To test cueing accuracy we used adjacent music selections on the Philips TS4 disc that have virtually no time gap between them—there is an almost instantaneous transition from instrumental sound on one selection to a vocalist on the next. We checked the ability of each player to start the second selection without truncating the first syllable of the singer's performance. Only a couple of players performed this test perfectly, but most did quite well, and such tight segues are rare on Compact Disc recordings anyway.

We also measured the time required for a player to change from Program 1 to Program 15 on the TS4 disc, an indication of the slewing capability of its scanner's servo system. The results ranged from 1 to 18.5 seconds among the players tested, suggesting that there are some real (but not necessarily significant) differences in their mechanical operation.

The Players

The first generation of CD players are, as a group, replete with special programming and control features. It would be impossible in the space at hand to describe each machine (or even one of the more versatile units) in any great detail. Moreover, only a few of the test units came supplied with instruction manuals—and one of those was in Japanese! For the most part, we had to learn the functions of the many controls by experimentation, which was soon facilitated by a growing familiarity with the features common to many of the machines. Nevertheless, it is quite possible that we missed some features of some of the machines or incorrectly interpreted their behavior.

Some of the players seem to be nearly identical in control functions and front-panel layout, differing principally in details of styling. The Kyocera and Phase Linear units pair up in this fashion, and so do the Toshiba and Kenwood ones, although the Kenwood player has a proprietary feedback circuit found on several other products from that company.

Most of the units are about the size and shape of a typical integrated amplifier or cassette deck. Except for the top-loading Magnavox player, all load from the front and can be stacked with other components. The Sony and Yamaha models have motorized drawers that extend at the touch of a button and allow the disc to be placed on a flat, horizontal surface. A second touch of the button causes the drawer to retract for playing. This loading system is (we found) less likely to expose a disc to handling damage during loading or removal than some of the others. On most of the other players, a section of the front panel hinges outward (as on many cassette decks), and the disc is placed into a sloping compartment or a slot on the panel door itself. Most of these swinging-door models require the door to be pushed closed after the disc is loaded, but some close at the touch of a button. One or two retract the protruding disc as they close, and one (the Technics) even closes automatically after a disc is placed in the slot.

Each player has some form of display that, at a minimum, shows which selection is being played and how many there are on the disc. Most visually present much additional data, such as the location of each selection on the disc, its duration, the total playing time of the disc, the playing time of the selection being heard, the number of selections programmed to be heard, and even, in the case of the Mitsubishi, the signal level in each channel as the selection is being played.

The following individual remarks on the eleven CD players, arranged in alphabetical order, deal for the most part with each unit's departures from the "norm" (to the extent that such a thing exists). They are not meant to be complete descriptions. For a summary account of each player's features, price, etc., see the chart on page 51. Our laboratory measurements are similarly presented on pages 52 and 53.

Hitachi DA-1000. Hitachi's first CD player is a relatively compact unit whose disc-loading door opens and...
11 CD Players

closes at the touch of a button. It has a scanner play feature that rapidly samples the contents of the disc, playing about 1 second of each selection before going on to the next. An LED display shows the setting of the pushbutton volume control (which operates a motor turning a conventional potentiometer). It is one of the few machines to have a headphone output as well as a variable line output, both controlled by the same up/down volume buttons.

Kenwood L-03DP. The Kenwood L-03DP has a loading door that opens at the press of a button but must be closed by hand. The machine is very easy to use and provides very rapid access to any part of the loaded disc. In addition to the normal fixed-level audio outputs, the L-03DP has a pair of "Sigma Drive" variable audio outputs with special I-meter cables. Like the similarly named feature of some Kenwood amplifiers, this circuit supplies negative feedback from the cable output to the player's internal analog output stage. This is said to reduce the output impedance of the L-03DP from its normal 600 ohms to 1 ohm. A button on the rear apron of the player engages a feature that emits an audible chirp sound when any of the controls is pressed.

Kyocera DA-01. Kyocera's CD player has one of the most comprehensive programming systems in the group, including phrase-, index-, and time-cueing. Its loading door opens at the touch of a button but must be closed by hand. The fast-forward and "rewind" modes of this machine are very fast, but they are not useful for finding a specific recorded segment since the audio is silenced when they are used. The walnut side panels of the DA-01 match the styling of other Kyocera products.

Magnavox FD 1000SL. Made by Philips (the parent company of Magnavox), the FD 1000SL is the least-expensive and smallest unit we tested, as well as the simplest to operate. It comes with an exceptionally complete multilingual instruction manual, background material, and a musical demonstration sampler Compact Disc. Although the FD 1000SL has fewer special features than the other players and can be programmed for a maximum of only fifteen selections, it is so similar to a basic cassette deck in its operations that anyone with previous exposure to audio components should be able to use it from the start, even without the instruction manual!
The FD 1000SL is relatively slow in traversing the radius of a disc and in stepping from one selection to another. Perhaps because of its leisurely movement, its cueing was perfect; it was the only machine to start the vocal selection (see description of the cueing test above) with absolutely no audible truncation of the first syllable. Probably more important, it was the only player to be completely unaffected by any of the disc defects in our tracking tests. (Note, however, that in this case the same company, Philips, made both the test disc and the player.)

Mitsubishi DP-101. The Mitsubishi DP-101 was one of the most versatile, full-featured machines in the group. Its tasteful styling cleverly de-emphasizes the large number of controls on its panel—thirty-two pushbuttons and one small knob (for headphone-level adjustment). Most of the buttons used for the

...
### COMPACT DISC PLAYERS: OPERATING FEATURES

<table>
<thead>
<tr>
<th>Suggested Retail Price</th>
<th>$1,000</th>
<th>about $1,000</th>
<th>$1,050</th>
<th>$900</th>
<th>$1,100</th>
<th>$995</th>
<th>under $1,000</th>
<th>$900</th>
<th>$1,000</th>
<th>$1,000</th>
<th>$1,395</th>
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#### MANUAL OPERATION

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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Skip Back to Previous Selection</td>
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<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<td>Yes</td>
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<tr>
<td>Scan/Search</td>
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<td>Yes</td>
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<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
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<td>Program Audible During Scan/Search?</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<td>No</td>
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<td>No</td>
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<tr>
<td>Repeat Selection/Side?</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Repeat Phrase</td>
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<td>Cue by Selection Number</td>
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<td>Yes</td>
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<td>Yes</td>
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<tr>
<td>Cue by Index Number</td>
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<tr>
<td>Cue by Time</td>
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<td>No</td>
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<td>No</td>
<td>Yes</td>
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#### PROGRAMMED OPERATION

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<tr>
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<td>30</td>
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<td>63</td>
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<td>27</td>
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<td>Can Order Be Random?</td>
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<td>Yes</td>
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<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Can Sequence Be Repeated?</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
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<tr>
<td>Skip Forward to Next Item in Sequence?</td>
<td>No</td>
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<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
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<tr>
<td>Skip Back to Previous Item in Sequence?</td>
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</tbody>
</table>

1. The division into manual and programmed operation is somewhat arbitrary since in some cases there is interaction between manual and programmed functions.
2. Sound is audible every few seconds in scan/search mode.
3. Choice between repeating a selection or a side may involve the use of programming functions.

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extensive programming facilities, as well as the headphone jack and its volume control, are placed behind a hinged panel, where they are visible but less likely to daunt a non-hobbyist user. The DP-101 also has a wireless (infrared) remote-control unit that duplicates all of the control buttons and most of the programming functions. Fortunately, the player comes with a well-written instruction manual; without it we probably would not have been able to make use of many of its features.

**Phase Linear 9500.** The Phase Linear Model 9500 player has a very complete programming system that includes phrase-, index-, and time-cueing options. The fast-forward and "rewind" modes are very rapid in operation, but their usefulness for locating a specific part of a selection is limited since the output is muted during their use. The loading door of the Model 9500 opens at the touch of a button but must be closed manually. The unit's satin-gold finish and rounded front-panel edges match the styling of other Phase Linear components. We found the instruction manual to be exceptionally comprehensive and informative.

**Sharp DX-3.** The Sharp DX-3 is a compact unit, about the size of the Hitachi DA-1000, which it superficially resembles (the two are quite different in their operation, however). It comes with a manual in no fewer than seven languages (one of them English, fortunately). In addition to a memory sys-
CD Players

Sony CDP-101. One of the smallest players we tested was the Sony CDP-101, whose operating features are unlike those of any of the other machines. After a disc is loaded, the number 1 appears in a window on the panel, indicating that the first selection is ready for playing. Two other buttons are identified as the forward and backward AUTOMATIC MUSIC SENSOR. Each time one of these is pressed, the next, or the previous, selection is cued up and played. Any selection on the disc can be played by advancing to its starting point with these buttons before pressing the play button.

The CDP-101 has no provision for programming a sequence of selections, but the machine can be set to repeat either the selection being played or the entire disc. Its phrase-repeat control button is marked MEMORY, but it is very easy to use if you want to listen repeatedly to a particular portion of a disc; alternately pressing this button defines the beginning and end of the section to be repeated.

One of the nicest features of the Sony player is its fast-scan monitoring. Four buttons provide accelerated scanning in either direction, and the program is audible at all times with no change in pitch. One set of buttons speeds up the playing rate by three times, the other by twenty-five times.

The CDP-101 comes with an infrared remote-control unit that duplicates all the front-panel functions except the disc-eject control. The remote control also allows direct entry of a selection number using a numerical keypad. A rear-panel AUTO-PAUSE switch automatically puts the player in pause mode after each selection, and a nearby ANTI-SHOCK switch increases the player's ability to withstand external jolts while slightly decreasing its ability to deal with badly damaged discs.

Technics SL-P10. Although the Technics SL-P10 presents a relatively

### COMPACT DISC PLAYERS: LAB TEST RESULTS

<table>
<thead>
<tr>
<th>Hitachi DA-1000</th>
<th>8 ohms</th>
<th>600 ohms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenwood L-03DP</td>
<td></td>
<td></td>
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<tr>
<td>Kyocera DA-01</td>
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<tr>
<td>Magnavox FD 1000SL</td>
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<tr>
<td>Mitsubishi DP-101</td>
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<tr>
<td>Phase Linear 9500</td>
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<tr>
<td>Sharp DX-3</td>
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<tr>
<td>Sony CDP-101</td>
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<tr>
<td>Technics SL-P10</td>
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<td>Toshiba XR-Z90</td>
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<tr>
<td>Yamaha CD-1</td>
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</tbody>
</table>

The curves above show the measured frequency response of the eleven CD players tested for this article (see chart at right for numerical results). In order to make small response differences apparent, the vertical scale divisions represent only 1 dB—a much finer scale than we usually use for lab-test graphs, which typically have 5-dB divisions.

The curves above show the measured frequency response of the eleven CD players tested for this article (see chart at right for numerical results). In order to make small response differences apparent, the vertical scale divisions represent only 1 dB—a much finer scale than we usually use for lab-test graphs, which typically have 5-dB divisions.

1. Distortion below player's noise level
2. See text for explanation of these ad hoc tests
3. Tested using Philips Test Sample 4A

Dash signifies "not applicable."
simple, uncluttered appearance, it is in many ways the most versatile player in this group. Much of this versatility lies in its extensive programming capabilities. Up to sixty-three different selections or parts of selections can be entered in virtually any order and will be played in the same sequence after the play button is pressed. The sequence can be programmed by selection, index number within the selection, and playing time within a selection. The start and stop points for each segment are set independently, making possible such unlikely arrangements as playing selection No. 19 from 43 seconds to 2 minutes and 12 seconds, then going to selection No. 3 and playing its last 9 seconds, then going on to No. 5, and so on.

It is unlikely that most people will wish to listen to their music in such a fragmented fashion, but it is even easier to use the SL-P10 in a more conventional manner. The instruction manual contains detailed examples of its programming capabilities. Although effective use requires practice, no one is likely to feel intimidated by the external appearance of the machine.

**Toshiba XR-Z90.** The Toshiba XR-Z90 is quite easy to use, and it provides very rapid access to any part of the disc in any order the user might desire. The loading door opens at the touch of a button but must be closed manually after loading the disc. In our test of resistance to external shocks this was the second-best player in the group.

**Yamaha CD-I.** The Yamaha CD-I is an intriguingly different player, quite unlike any other in its appearance and control functions. Although it is one of the most compact players (it has one of the lowest profiles in the group), the CD-I is by far the heaviest of them. Perhaps because of its slim appearance, it weighs 31 pounds feels like twice that much when it is lifted.

All of the controls are flat, flush-mounted, light-touch buttons. The disc loads into a drawer that emerges and retracts at the touch of a button. Bright
red LED numerals show the program number and the elapsed playing time in minutes and seconds. Pressing one side or the other of the play button raises or lowers the selection number as desired, and a couple of seconds later playback begins. Another button marked with double arrows moves the laser scanner rapidly in either direction (with the audio muted); normal play resumes upon its release (the exact time position is always shown on the front-panel digital display).

Other buttons on the front panel are marked REPEAT, PAUSE, PROG.PLAY/STOP, and OPEN/CLOSE. Above them is a second display window, normally dark, that repeats the readouts of the main display plus two digits marked PROG.NO. Pushing the OPEN/CLOSE button causes a small drawer carrying these controls to slide open, revealing ten more small buttons. These are the Yamaha CD-1's programming controls. The unit can be programmed to play up to fifteen selections, two of which may be specific portions of a selection designated by programmable start and stop points.

When the programmed-play mode is used, the concealed controls and indicators replace those of the normal-play section, and none of the latter's buttons have any effect. The programming-button drawer retracts during play just as the disc drawer does, leaving the CD-1's front panel uncluttered and flush.

**Test Results**

Our laboratory measurements are presented in tabular form (the most practical way to present hundreds of pieces of data) in the chart on page 53. Not shown are the results of our attempt to measure flutter. As Philips points out in the information accompanying its test disc, the CD system simply does not have any flutter. Our readings were at the bottom of the flutter-meter scale, about 0.001 to 0.0015 per cent, which is the residual reading of that instrument.

We also viewed the square-wave response of each player, using the test signals on the Philips TS3 record. For the most part, all the players had identical responses, showing nothing that could not have been predicted from the presence of a sharp-cutoff 20-kHz filter in the output of each player. The square waves "rang" at about that frequency, and in the case of the TS3's 5.512-Hz square-wave signal, only the third harmonic (16,536 Hz) was passed by the player's filters.

There was one exception, however. The Magnavox FD 1000SL uses all-digital output filters instead of conventional discrete-component analog types. This gives its square-wave response a different appearance from that of the other players, with ringing occurring at the beginning and end of each half of the signal instead of only at the end of each level transition. In the frequency-response graph, the FD 1000SL's digital filter gave its curve a very slight ripple at high frequencies, but the response was flatter overall than in units with conventional filters. Our measurements revealed similar frequency response (but not similar square-wave response) for the Phase Linear and Kyocera units.

Our laboratory tests convinced us that all of these Compact Disc players are essentially alike in their playing quality. Most of the measured differences were so small that they could not conceivably be heard by anyone under normal conditions. The one exception was clearly a sample variation. The audio noise of the Kenwood machine was higher than any of the others, but we suspect that this characteristic is peculiar to our test sample. When we played an "infinity zero" (no-signal) section of a test disc on the Kenwood and turned the volume way up, hiss was audible a couple of feet from the speakers, in the same test with the other machines absolutely nothing could be heard even when we listened up against a speaker. To put this result into perspective, however, let me point out that at a more reasonable, though still high, listening level (equivalent to 200 watts per channel into the speakers), nothing at all could be heard from a "silent groove" even with the Kenwood machine.

The peak-to-peak frequency-response variation of these machines was less than 1 dB from 20 to 20,000 Hz—for most of them less than 0.5 dB. Their average harmonic distortion was 0.003 per cent at 0 dB (maximum) output and 0.012 per cent at −20 dB (at lower levels it was obscured by system noise and not measurable). The intermodulation distortion was in the same range, from 0.006 to 0.02 per cent. A-weighted noise averaged −95.7 dB, and average channel separation was 99.5 dB at 1,000 Hz and 85.3 dB at 20 kHz. The maximum output voltage was about 2 volts.

(Continued on page 56)
Maxell XL I-S and XL II-S are the ultimate ferric oxide cassette tapes. Precision engineered to bring you a significant improvement in dynamic range.

XL I-S provides exceptionally smooth linear performance characteristics with high resolution of sound and lower distortion.

While XL II-S has a greater saturation resistance in higher frequencies resulting in an excellent signal to noise ratio.

How did we achieve this?

**IMPROVED EPITAXIAL PARTICLES.**

Maxell engineers have managed to improve the Epitaxial magnetic particles used on both tapes.

By developing a crystallization process that produces a more compact, smoother cobalt ferrite layer on the gamma ferric oxide core, they've been able to pack the particles more densely and with greater uniformity on the tape surface.

This increases maximum output level and reduces AC bias noise which in turn expands the dynamic range.

**IMPROVED EPITAXIAL PARTICLE CHARACTERISTICS:**

- More uniform cobalt-ferrite layer
- Smoother particle surface
- Improved uniform coating thickness: 10-11A (1Å = 1/10,000,000 mm)

So you get a better signal to noise ratio, greater resolution of sound and higher output levels.

Of course, greater dynamic range isn’t the only reason to buy Maxell high bias XL II-S or our normal bias equivalent XL I-S.

Both tapes have more precise tape travel and greatly reduced distortion levels.

You’ll see both these improvements covered in detail in future Audiophile Files. In the meantime, we suggest you listen to them.

For technical specification sheets on the XL-S series, write to:

Audiophile File, Maxell Corporation of America,
600 Oxford Drive, Moonachie, New Jersey 07074.
The listing of features and programming limitations in the chart on page 51 is self-explanatory. For the impact-resistance ratings, the Sony player was best by a substantial margin, but we cannot rule out sample variations for the others, since virtually identical units (Toshiba and Kenwood, Kyocera and Phase Linear) earned very different ratings. Similarly, cueing accuracy was rated from A to C, with an A rating indicating that no significant part of the first syllable in the accessed vocal selection was deleted and a C meaning that there was sufficient loss to impair the intelligibility of the word.

In the defect-tracking test, the numbers represent the length (in micrometers, or millionths of a meter) of the smallest damage section that a given player was not able to play without an audible defect. This could take the form of a click, a brief muting (or dropout), or a repetition of a phrase. The smallest defects on the test record were 400 micrometers for information-layer damage and 300 micrometers for the black dots on the outer layer of the playing side of the disc, with respective maxima of 900 and 800 micrometers. Only two of the players showed any effect from the simulated fingerprint, and that was not on every trial.

As the data indicate, only the Magnavox was able to pass this entire test with no loss of performance, although the Kyocera was not far behind. Oddly, the Kyocera’s design twin, the Phase Linear, tied the Sharp for bottom place in this test, which only emphasizes the hazards of reading more into it than is warranted. These were, after all, early production samples, and we have no way of knowing their prior handling and setup history. The fact that the Phase Linear unit was also the most sensitive to shock effects leads us to suspect that it was not in a state of optimum adjustment, although its playing performance under normal conditions was flawless.

Conclusions

We were enormously impressed by all of these CD players and the few music discs at our disposal. The mingling of programs derived from both analog and digital master recordings on a single CD sampler made it possible to appreciate both the strengths and the weaknesses of the analog medium. At its best, a good analog master tape (which is essentially what one hears when playing a digital CD derived from it) comes remarkably close to matching digital quality, at least in that its noise level can be below audibility at reasonable listening levels.

On the other hand, the digitally mastered discs had an incredible bass (they can go down to nearly 0 Hz) that could often be sensed through speakers that we never suspected of having exceptional low-bass capability. I was often able to feel the bass, even at low levels, in selections that I would not have chosen to demonstrate bass reproduction. Moreover, the CD medium is free from all the kinds of modulation noise and distortion that are inherent in analog tape and disc recording and reproduction. CD’s have nonlinear distortion (both harmonic and intermodulation) several orders of magnitude below the levels typical of the best analog media—which is to say, essentially none. Finally, the medium has no wow and flutter or any of the complex frequency-modulation effects that can result from these fluctuations.

Perhaps no one of these qualities is decisive, but in the aggregate they make digital sound a totally different experience from the “old-fashioned” analog variety. The clarity of a good digital recording sets it apart from even the best analog recordings. It is, of course, possible to make an undistinguished, or even a terrible, digital recording, and there are a number of those available. Digital sound is the wave of the future, sonically speaking, and it is starting to lap at our shores.

What of the proliferation of special features on this first generation of CD players? To me, some of these features are very valuable, but others are useless. Time and the marketplace will sort them out. In this respect, some of these CD players are like many current cassette decks in which the manifold capabilities of the microprocessor are being exploited without much regard to utility or even desirability. That’s not surprising, since from an operational viewpoint a CD player is closer to a computer-controlled cassette deck than to the kind of analog record players we are familiar with.

While the availability of Compact Discs is still limited, the situation is improving. Despite being a little bored by intensive repetition of only a few sampler discs, my experience with these players has convinced me that the CD system is the greatest advance in home sound reproduction since the switch from the acoustic to the electrically amplified phonograph.
AUDIOPHILES may blanch and purists may cringe, but our experiences with several digital Compact Disc players over the last several months leads me to the conclusion that specifications and the results of lab tests should be among the last things examined while shopping for one. The reason? The specs and test results are all so good that you could probably choose a CD player blindfolded and wearing earplugs and end up with a unit that sounds practically identical to all the others. The audible differences among CD players are very small.

Shopping for a CD player demonstrates one of the most iconoclastic aspects of all digital audio: sonic performance is almost identical regardless of the manufacturer, design, or particular technologies involved. Even less-expensive CD players, when they become available, should sound the same as the first generation of machines. How, then, can a music lover make a rational choice from the many models available? What's left after specs and lab test data? Only features and what is usually called “human engineering.”

A Variety of Features

The first Compact Disc players offer an impressive array of features. Unfortunately, no one machine has all of them. Available are several types of cueing, scanning, and programmable playback sequencing as well as such other convenience features as front panel time displays, remote control, headphone outputs, and variable output levels. Which combination of features suits you best is an entirely personal decision that depends on how you like to listen to music.

If you're a classical-music lover who likes to start a recording at the beginning and listen all the way through, then the more advanced cueing facilities and programming functions may not be useful to you. On the other hand, if you like playing DJ or having continuous background music at parties, these features may come in very handy. But don't be surprised if your listening habits are changed through exposure to Compact Discs. The noise-free, wide-range, unstrained sound of the best CD recordings can most easily be described as addictive. In comparison, all analog discs can seem too noisy and too troublesome to care for. The easy access to all parts of a disc that the first CD players provide can also change your listening habits. Finding particular musical phrases is a very simple matter with some machines—a useful capability in any music-education situation. A CD's immunity to damage from repeated playings may, together with a remote control, encourage you to listen to parts of a disc again and again. Or you might want to skip wildly through a disc playing only the selections you really like. In any case, the only way you can get an idea of what the Compact Disc system can do is through hands-on experience with CD players and discs.

A guide to deciding which features are right for you

By David Ranada

How to Buy a CD Player

Before you start to shop for a player, invest in at least one Compact Disc of music you know or like. And, since evaluating a player's cueing facilities requires something to cue up, make sure the disc you buy has more than one selection on it (such as a multimovement symphony or a pop album with several songs).

Once you select your first disc, the rest of the comparison process is quick and simple—so simple that you can use the following checklist, which covers almost all of the features available in the first generation of CD players.

□ Operate all the basic functions (PLAY, STOP, PAUSE, ADVANCE TO NEXT SELECTION), paying particular attention to how long the player takes to react to each command. The ADVANCE command may take as long as 10 seconds' response on some machines, which is much slower than cueing on an analog turntable. You may find the delay inconvenient after a while.

□ Operate the manual-cueing functions (SCAN FORWARD, SCAN BACKWARD, FAST FORWARD, FAST REVERSE). Note how easy or difficult it is to cue up a particular musical phrase (this is one reason it is helpful to know the music well). Some players mute during scanning, but others provide some audible output. The PAUSE control cannot be activated on some machines until the selection has been located and cued, whereas other units store the PAUSE command and go immediately into pause when the selection is found.

□ Operate any automatic-cueing functions (SELECTION CUEING, INDEX CUEING, TIME CUEING), again noting how long the player takes to get to where you tell it to go.

□ Try to activate another function before the previous one is completed, such
as ordering the player to cue up selection No. 4 while it is still cueing up selection No. 2. Some machines require a cancel or stop command in such cases, but others automatically cancel all commands but the latest.

☐ Try, though you may not succeed without instruction, to operate some of the player’s programming facilities (if any). Note how many selections can be automatically sequenced, how easy it is to modify or cancel a sequence, and how easy it is to jump out of the middle of a programmed sequence while it is in progress.

☐ Operate any other controls. Does the volume control (if any) completely cut off the sound when it is turned all the way down? Also check whether there is enough output to drive your headphones to reasonably high levels.

☐ Finally, if you haven’t been thrown out of the store yet, examine the front-panel displays to see if they provide all the information you think you might need. Some readouts only show the elapsed time of a selection; others can be switched to show the time remaining on a disc (useful information when tapping a CD) or the total elapsed time from the beginning of the disc. Many machines have some provision for examining the timings of each selection.

This checklist does not cover every feature available on every model in the first generation of CD players. Each model has its own peculiar operating characteristics and quirks, and these are best found through in-store experimentation. Who knows? You might like some of the quirks.

Torture Tests

The checklist above also does not cover two other very important aspects of Compact Disc player operation: error correction and resistance to shock and vibration. These too can be evaluated in a store (again, assuming that you are able to find a sympathetic dealer), although the procedures necessary are aptly termed “torture tests” since they subject a CD player to challenges that would be rare in normal use.

Error-correction and error-concealment circuitry is included in every Compact Disc player in order to compensate for losses of musical information caused by disc damage either during manufacture or in use. Fingerprints, nicks, scratches, and scuffs cause errors in the digital data stream as read by a player’s laser scanner. In most cases errors will be completely—and exactly—corrected, but extensive damage may require error concealment, a process in which the CD player estimates what the lost information probably was. Longer errors usually initiate muting, which may or may not be noticeable depending on how it is performed and how long it lasts. These three processes—error correction, error concealment, and muting—are intended to spare the listener from the audible consequences of all but the most severe disc damage.

Why is testing the error-correcting abilities of CD players important? It isn’t—if you expect to take good care of your Compact Disc pressings or to borrow undamaged pressings from librarians or friends. However, a CD pressing subjected to repeated mishandling accumulates surface damage; sooner or later the damage will build up to the point where it exceeds the ability of a player to correct for it, and the consequences may be audible.

Testing Error Correction

The easiest way to compare the error-correction abilities of various players is to have them all play a disc with a known defect. You can make such a test disc yourself by covering part of the signal surface with a wedge of tape, impressing fingerprints on it, etc. (see box on next page.) Using a homemade error-test disc is easy. Just insert it into the player under evaluation, press play, and see how long the disc plays the tape-obscured portion of the disc before you start hearing audible defects—the longer before they occur, the better. They will probably begin as a series of low-level clicks or thumps, or possibly as brief mutings of the signal. Eventually something catastrophic will happen: the scanner will get “stuck” (the digital equivalent of a locked groove) or start skipping large sections of the music in an attempt to find a “trackable” portion of the disc.

With only one fingerprint on a test disc, a player should not mistrack, emit clicks, or mute while the fingerprint is scanned. If all the players you are considering pass the one-fingerprint test, add another fingerprint near the first one but away from the tape wedge. Then try all the players again. Keep adding more fingerprints, one at a time, until the players’ error-correction systems start failing. Those that fail later are better at handling this type of disc damage. Often, quite a few fingerprints will be necessary to produce any audible effects.

For another torture test with your deliberately defective CD, put the player in STOP or Reset mode and then try to cue up a selection that begins on the portion of the test disc covered by the adhesive tape. Some players that can play straight through the tape wedge are unable to cue up a selection starting under the tape. Finally, if you are really adventurous, you might want to make a permanently damaged test disc by scratching one. A group of several light, closely spaced scratches made with a hobby knife or razor blade stands a good chance of making some players misbehave, especially if the scratches are tangential to the spiral signal path rather than radial.

When considering the weight of such tests in a buying decision, however, remember that if you plan to play only CD’s in good condition, you don’t need to test a player’s error-correction abilities at all. Every correctly operating CD player should be able to play any CD kept in pristine condition.

Shock Tests

Vibration and shock tests are necessary only if the CD player you select is going to be placed on a vibration-prone shelf or table. The acoustic-feedback effects that can occur with analog turntables do not affect CD players in any audible way. Strong mechanical jolts from nearby dancing or heavy footfalls can, however, throw off a player’s laser tracking system enough to cause an audible burble or skip.

The easiest way to test for this in a showroom is just to tap the player at various points while it is playing a disc. The most shock-immune players require a fairly heavy jolt before anything untoward is heard, but other machines may mistrack just from the impact of their controls.

Try to combine error-correction and shock tests—a CD player is much more prone to an error-correction failure while it is recovering from a mechanical jolt. Tapping the player under test while it is scanning the fingerprint(s) on your test disc is sufficient. If it still plays correctly, the unit is fine.

Specifications

Audio specifications for Compact Disc players cannot be ignored, if only because so much is made of them in advertisements. But I firmly believe that all of the first-generation players are—when operating properly—so close in audio performance that there is no musical reason to choose one over another. To put it another way, the differences among CD players are sonically insignificant (in fact, they are virtually impossible even to hear). They are far less important to the quality of the sound you’ll hear at home than, for example, the choice and placement of microphones by the recording engineers, the abilities of the technicians who tune the piano(s) for the recording session, or...
even the relative humidity in the concert hall where a symphony is recorded—not to mention the character of the recorded musical performances themselves.

Despite this, some people are going to express strong opinions about the sonic superiority of one CD player over another. Could they have something? Maybe. If such opinions were formed as the result of double-blind, direct A/B listening tests, I'd be more inclined to believe them. I'd have to be sure, though, that the output levels from the players were matched within 0.25 dB—preferably within 0.1 dB—and that they were playing exactly the same spot on the same recording when the (instantaneous) switching was done. (These are hints for those who would like to conduct listening comparisons.)

Assuming it is working properly, any CD player's distortion levels will be below audibility, and the differing inherent noise levels of the various models will all be masked by typical listening-room and recording noises. Differences in high-frequency phase shifts are probably not even audible with common musical material. A CD player whose measured performance in any of these categories is substantially out of line with the majority of CD players is probably not functioning properly.

Of all the common audio specifications, frequency response is the most important, even with CD players. A glance at the frequency-response curves of various models shows—despite their consistently impressive flatness by analog-disc standards—that there are slight differences, particularly at the very highest frequencies. If a given player's response is up by, say, 0.15 dB at a given frequency while another unit's response is down by 0.15 dB at the same point, their total difference in frequency response is 0.3 dB. If this degree of error extends over a wide enough frequency band, there may be an audible difference with some types of program material (a CD recording of pink noise would manifest this sonically minuscule difference immediately). Which player is better? Neither. In my opinion, anyone basing the choice of a CD player solely on this test (or on any other specification) misunderstands what is truly important about the performance of a CD player: its versatility and ease of control.

**What's Coming**

As has also happened with many amplifiers, tuners, and receivers, for purposes of buyer selection the audio performance of a CD player can take second place in importance to its ease of operation. This makes things much easier for the potential buyer. You don't even have to be an audio enthusiast to make an intelligent choice. This situation is only a sample of things to come as digital technology continues toward domination of sound reproduction.

Some distance down the road we can expect such marvels as Compact Disc players with text outputs to show lyrics or program notes on a TV screen, portable and automotive CD players, digital signal processors to replace tone controls, equalizers, and disc or tape noise-reduction systems—and maybe even Compact Disc recorders for consumer use. The surprisingly consistent quality of the first Compact Disc players indicates a very bright future for digital audio.
SHOPPING for hi-fi components can be confusing enough even when you have all your facts straight. And if you subscribe to many of the common myths and misunderstandings about how audio equipment works, how specifications relate to what you hear, and what all of the technical jargon means, you're really in trouble. Some misconceptions have their origin in misleading claims made by salespeople or in advertisements; others arise from the wondrously complex and subtle nature of the human hearing process, which inevitably gets involved in the judgments that people make about how good a stereo system sounds—or how they assume it ought to sound.

Let's shoot down some of the hot-air balloons that continually arise in hi-fi, taking as our gospel the principle that there are exceptions to almost every rule. To choose audio components, listen to them, not to theories and claims about them. And remember that what you hear in any particular case may be influenced as much by the factor of compatibility—between a stylus and a tone arm, between an amplifier and a speaker, between speakers and room acoustics—as by the quality of individual components. If a system sounds good, it is good, regardless of theory. If it sounds bad, something in it probably is bad—but the fault may not be what you think it is. The twenty-one misconceptions discussed here, in no particular order, are among those we have found to be most common.

1 Weighted specifications are the audio industry's way to cheat by making the numbers look better.

False. Weighting is an effort to make test equipment "hear" the way the ear does, so as to produce measurements that accurately predict what we will hear. For instance, A-weighted measurements of background noise correctly reflect the fact that at low volumes the ear is sensitive to even very small amounts of noise occurring at mid-treble frequencies (around 3 kHz) while much larger amounts of noise at low-bass frequencies are inaudible.
2 Okay, then, unweighted specifications are meaningless.

Wrong again. Although unweighted specs often don’t correlate directly with what we hear, they can alert you to other problems. For instance, if a turntable’s rumble is concentrated at frequencies below 10 Hz, where the ear can’t hear it, the DIN-B-weighted rumble figure is likely to be down around -60 or -70 dB, correctly predicting that you won’t hear the rumble itself in playback. However, if the unweighted rumble figure for the same turntable were -30 dB or worse, that could indicate unwanted stylus vibration that would be heard—not as rumble, but as wobble and mistracking. Similarly, if a product’s A-weighted signal-to-noise ratio (S/N) is good but the unweighted S/N is much worse, it may have excessive 60-Hz hum since A-weighting reduces the influence of any power-line hum on an S/N measurement.

3 Records must be stored vertically, never lying flat.

Only half true. Actually, once you understand that record vinyl is a congealed liquid that yields under pressure (like very thick molasses), the two primary rules of record storage will be obvious: (1) Records should be subjected only to light pressure; heavy pressure may press loose dust or wrinkles from the plastic liner into the vinyl surface. (2) Any pressure should be distributed evenly over the disc; uneven pressure may cause warping.

Thus, vertical storage is fine (really vertical, not leaning; fill empty spaces with cardboard). But horizontal storage on closely spaced shelves is also okay; you can stack up to a dozen discs on a level surface before the pressure on the bottom disc becomes too great. In either case, be sure that the discs’ jackets are not themselves warped or tight enough to cause warping.

4 A 60-watt amplifier will play 20 per cent louder than a 50-watt amplifier, and a 100-watt amp will play twice as loud.

Nope. A 20 per cent increase in available wattage amounts to less than 1 dB of increased loudness capability. Doubling the power input will give a 3-dB increase in volume, which can be noticeable but is definitely not dramatic.

It’s a matter of biology: our eyes and ears have an approximately logarithmic response to light and sound so that they can cope with the million-to-one range in intensities that they are exposed to. In any stereo system only 1 to 10 watts of power are actually used, on average, to generate “loud” sound levels with typical music. An amplifier’s ability to put out more power does, however, influence its sonic clarity, “openness,” and low-bass impact, especially during transient peaks and climaxes.

5 Any two 50-watt amplifiers should sound alike.

Well, sort of. Actually, a well-made 20-watt amp and a 200-watt amp will sound alike much of the time. But if you are concerned about those transients and climaxes that stress an amplifier’s capacity to the maximum, then the rated power is only a very rough guide because it is measured using an 8-ohm resistor instead of a loudspeaker. “Power” is the electrical product of both voltage and current. Two amplifiers with the same power rating usually have the same maximum voltage output, but they may have very different output current capacities, which can make an important difference in driving a loudspeaker that has a low or complex (“reactive”) impedance.

6 Moving-magnet (MM) phono cartridges are not as good as moving-coil (MC) cartridges.

As cartridges of both types continue to improve, the accumulating evidence indicates that it really doesn’t matter whether the magnet or the coil does the moving. In various comparisons among high-performance MC and MM cartridges—notably a set of carefully controlled listening tests supervised by Canadian researcher Floyd E. Toole—the audible differences in timbre and detail have consistently been related to the cartridges’ known differences in frequency response. When these differences were equalized, the MM and MC pickups sounded alike.

7 Sensitivity is the most important specification of an FM tuner.

Perhaps—if you are located more than fifty miles from your favorite station and cannot use a roof antenna. In the urban and suburban locations where most people in the U.S. live, however, signal strengths of several hundred microvolts are typical, and the usual problem is interference (due to multipath reflections or strong adjacent stations). Therefore, for the majority of FM listeners the really important FM-tuner specifications are capture ratio, AM rejection, and alternate-channel selectivity.

8 A component rated at 0.01 per cent total harmonic distortion (THD) will sound better than one rated at 0.1 per cent THD.

Biology again. Distortion generates false tones at frequencies other than those in the original signal. If these distortion components are sufficiently weak compared to the original signal, they won’t be heard. If you can’t hear them, reducing them still further below the threshold of audibility won’t make them any more inaudible. The actual threshold of audibility depends on the frequencies involved in both the original signal and the distortion. With musical signals of typical complexity, tests have repeatedly shown that distortion levels below 3 per cent aren’t heard even by experienced audiophiles.

(Continued on page 64)
All Out Taste.
The cigarette that changed two million minds. The one that rewrote the book on cigarette-making. The MERIT cigarette.

Made by actually boosting the taste you get out of smoking. Boosting taste to equal leading cigarettes having up to twice the tar. 

MERIT. There’s nothing halfway about it—you’ll know it when you taste it.

Nothing halfway about it.

MERIT

Kings & 100’s

Kings: 7 mg "tar," 0.5 mg nicotine—100’s Reg: 10 mg "tar," 0.7 mg nicotine—100’s Men: 9 mg "tar," 0.7 mg nicotine av. per cigarette, FTC Report Dec:81

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Bass depends on woofer size. A large woofer can always reproduce deep bass better than a small woofer.

The problem here is to distinguish between quality and quantity. The quantity (the volume level) of deep-bass output is strictly dependent on the amount of air that is moved, which equals the area of the woofer cone multiplied by its "excursion" (back-and-forth movement). Thus, a large woofer can reproduce bass at higher maximum volume levels; conversely, at a given high volume level, a large speaker can usually reproduce lower frequencies with less distortion than a small one can.

But at moderate volume levels the deep-bass "reach" of a speaker is a matter of design choice; some 8-inch woofers have useful response down to 25 Hz while some 12-inch woofers roll off steeply below 50 Hz. Deep-bass response is not free: to extend the bass you must either reduce efficiency (thus requiring more amplifier power for those climaxes) or use a bigger, costlier cabinet.

A three-way speaker system is better than a two-way system.

The main advantage of a three-way system is higher power-handling: it can play louder without burning out its voice coils, a significant consideration if you are trying to re-create rock-concert sound levels in a very large room. The purely sonic advantages of a three-way design, however, are small in theory and sometimes nonexistent in practice. Particularly in the mid-price range of speakers, a system employing two high-quality drivers and a carefully tailored crossover often outperforms one with three cheaper drivers and a complicated crossover. The proof, of course, is in the listening.

Separate components (tuner, preamplifier, power amplifier) are better than an all-in-one receiver.

Sometimes yes, but often not. Separates offer greater flexibility, of course, and some include more elaborate circuits or features (selectable wide/narrow tuner i.f. filters, for instance) that can prove useful in special circumstances. Also, very few receivers offer more than 100 watts per channel, so users who need or want more power may have to go the separates route. But a few manufacturers have found it more cost-efficient to make integrated amplifiers and receivers using the same circuitry as in their separates; such a receiver actually consists of tuner and amplifier separates in a single housing.

A belt-drive turntable is better than a direct-drive turntable, or vice versa.

Neither. The best examples of either type are superb. Among lower-priced units, each type has its strong and weak points. For instance, even a low-priced direct-drive system can easily be made to provide variable pitch and exact speed regulation. Belt-drive design, on the other hand, makes it easy to float the platter and tone arm on springs for isolation from internal and external vibrations. Take your pick.

Digital tuners are better than "analog" tuners.

The basic advantage of digital-synthesis tuning is its convenience: quick, precise, pushbutton selection of favorite stations. In terms of sensitivity and sound quality, though, the tuning method is irrelevant—except in those few digital tuners with inadequate internal shielding that allows noise and whistles from the digital circuitry to leak into the audio.

Chrome and metal tapes cause more rapid head wear than ferric tapes tend to do.

This old canard has been consistently proved false in tests. Poorly made "bargain" tapes are the only ones likely to cause rapid head wear, and these, of course, are mostly low-grade ferrics. With good tapes from reputable manufacturers there is no clear correlation between tape type and head wear. (With all tape types wear does tend to increase with high humidity, though.)

Chrome and metal tapes have more distortion than ferric tapes do.

This is true at high recording levels (0 VU and above), but the differences in distortion are slight. More to the point, at lower recording levels the distortion decreases rapidly to inaudibility with all tape types. So, to make recordings on high-bias tapes that are as distortion-free as those on premium ferric tape, simply decrease your recording levels by about 2 dB.
Playing a "normal" (ferric) tape in the chrome (high-bias) position will damage the recording.

No way. During playback, mis-set controls may cause poor sound, but the signal on the tape won't be altered—unless you accidentally set the deck for record and erase the tape!

Overloading a tape recorder (by pushing its level indicators strongly into the red) may damage the machine.

Not even a little bit. Oh, it's conceivable that you might bend a meter's needles if you "pin" them hard enough, but even that is very unlikely. As for the recorder's electronics, they can be damaged by connecting the 120-volt a.c. power line to an input jack but not by any authentic audio signal.

Tone controls should always be set "flat" for the most accurate sound.

This might be a reasonable notion if every other element in the recording and playback chain (from microphone to speakers to room acoustics) were known to be "flat," but of course that's not so, at least not yet. Regardless of how good your playback system is, recordings vary a great deal in tone quality (sometimes because of equalization added to compensate for imperfections in the studio's monitor speakers). In the absence of any objective standard of accuracy, it simply makes sense to use tone controls to obtain the sound that seems natural and lifelike to you.

Circumaural headphones (the kind with a rubber ring that fits all around the ear, making an airtight seal) are better than the open-air types that simply rest on the outer ear.

Circumaural phones have two advantages: extended deep-bass response is easier to obtain, and the airtight seal efficiently excludes external sound (an important consideration in live-on-location recording). Open-air phones tend to be more comfortable to wear and can sound equally good. In Stereophile's July 1982 listening tests of fifteen headphones, the three highest-ranked models were an open-air, a circumaural, and a quasi-circumaural design with a "leaky" foam ring instead of an airtight rubber surround. Evidently no one design approach is unequivocally the best.

Unlike discs, tapes don't wear out with repeated playing.

They do, but in a less obvious way. With worn discs, noise and distortion are added to the sound. When tapes are played a great many times there are signal losses, dropouts and high-frequency rolloffs, caused by the rubbing and flexing of the tape as it is pressed against the deck's heads, capstan, and guide posts. The highs may also be partially erased by residual magnetism in these metal parts, hence the need for periodic demagnetizing.

Digital Compact Discs (CD's) are virtually indestructible.

Not so. It is true that ordinary surface dust, fingerprints, and light linear scratches have little or no effect on them and that wiping a dirty CD clean usually restores pristine playback quality. But a curved scratch that follows the CD's spiral signal path can make it unplayable. Therefore, when cleaning a CD, do not use the circular brushing motion that is customary with analog LP's; wipe the disc from center to edge. And remember that the CD's signal surface is embedded directly beneath the label, protected only by a thin coating of lacquer. A scratch that penetrates through the label is likely to wreak more havoc than a scratch on the transparent-plastic-coated "playing" side of the disc.

Peter W. Mitchell, one of hi-fi journalism's most prolific writers, is also president of the Boston Audio Society and of his own electronics consulting firm.
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Maazel’s Rachmaninoff:
Definitive Interpretations,
Stunning Digital Sound

Although many recordings of Sergei
Rachmaninoff’s Symphony No. 3
and tone poem The Isle of the Dead
have gone in and out of the catalog
from the beginnings of the LP era to the
present, none until now has for me
matched the composer’s own recordings
with the Philadelphia Orchestra. He re-
corded The Isle of the Dead (with small
cuts) in 1929 and the symphony in
1939; they were briefly available on LP
in RCA’s five-volume 1973 commemo-
rative series, “The Complete Rachman-
inoff.” Leopold Stokowski gave the
symphony its première in 1936, but he
didn’t record it himself until forty years
later. That 1976 recording with Lon-
don’s National Philharmonic Orchestra
(Desmar 1007G) came closest to equal-
ing the thrust and excitement of Rach-
maninoff’s interpretation, especially in
the finale.

But now Deutsche Grammophon has
released new recordings of both works
by Lorin Maazel with the splendid Ber-
lin Philharmonic that may be essen-
tially the last word interpretively and have
stunning digital sound in the bargain.
Most performances of Rachmaninoff’s
orchestral music stress lyricism to the
point of sentimentality and push the
dramatic elements to the verge of hys-
teria. Such exaggerations are quite un-
necessary, as is shown by Rachmani-
noff’s own recordings, Eugene Goos-
sens’s recording of the Symphonic
Dances, and these new ones by Maazel.
While giving lyricism its due, Maazel
soft-pedals sentiment, stressing rather
the satanic aspect of Rachmaninoff’s
muse. The results are breathtakingly
persuasive.

The Isle of the Dead is wonderfully
atmospheric here; every detail is out-
lined with the starkness of a German
Expressionist woodcut. But the Third
Symphony is the greater achievement.
Maazel’s taut, strongly dramatic read-
ing avoids overemphasis of the big lyri-
cal tune in the first movement, makes
the scherzo episode in the slow move-
ment fiercely demonic, and for once
produces a finale that is not an anti-
climax. Even the composer did not quite
bring off that last feat in his recording,
nor did Stokowski in his. Maazel man-
gages to avoid all the pitfalls. He makes

Conductor Lorin Maazel
Mel Tillis

all the right moves in tempos and dynamics, and he gives us a performance that is uniquely satisfying.
—David Hall

Berlin Philharmonic Orchestra, Lorin Maazel cond. DEUTSCHE GRAMMOPHON 253 065 $12.98, 0 3302 065 $12.98.

Mel Tillis: One of Country's Vocal Masters Gets Back to Normal

A couple of years ago, Mel Tillis recorded an album with Nancy Sinatra, and I thought he'd stripped a small but very vital gear. Happily, his new album, "After All This Time," shows he's back to normal now, back on the MCA label where he belongs, and back to performing his own special brand of uptown honky-tonk. Actually, that last phrase is just a piece of shorthand for describing the kind of music Tillis sings, which is a smart blend of styles ranging from pre-World War II country swing to modern country-pop.

Named the Entertainer of the Year by the Country Music Association in 1976, Tillis is one of country music's real vocal masters, although his stutter and clowning around tend to obscure that. There's no missing it, however, on "After All This Time." The songs are mostly strong, and Tillis sings them as convincingly as he did Send Me Down to Tucson a few years back. In A Cowboy's Dream, for example, he delivers the chorus with a nuance that lets you know he's ached for "that kind of woman" at one time or another. But he can also transcend his material, making even such a hackneyed song as Mason Dixon Lines seem like grade-A stuff. (He's helped on this one by Waylon Jennings; the interplay of their two voices brings a nice energy to it.)

My favorite here is the tune that's been getting a lot of airplay lately, In the Middle of the Night, an infectious piece of steady-driving country-pop dressed up with some tasty Cajun fiddle playing. But I still can't figure out why Tillis says "rot" for "right." Maybe it's for the same reason John Anderson says he pronounces "swinging" as "swanging": "Somebody's gotta say it right!"
—Alanna Nash

MEL TILLIS: After All This Time. Mel Tillis (vocals); Waylon Jennings (vocal on Mason Dixon Lines); Jack Eubanks, Leo Jackson, others (guitars); Buddy Emmons (pedal steel); Hayward Bishop, Jerry Kroon (drums); Larry Paxton, Jos Osborn (bass); Willie Rainford (piano); Hoot Hester, Kenny Sears, Rob Hajacos, Bruce Watkins (fiddle); Terry McMillan (harmonica); vocal accompaniment. After All This Time; A Cowboy's Dream; In the Middle of the Night; Even at Her Worst (She's Still the Best); Rain; Mason Dixon Lines; I'll Take As Much of You As I Can Get; A Matter of Wine; Try It Again; She Meant Forever When She Said Goodbye. MCA MCA-5378 $7.98, ©MCAC-5378 $7.98.

Simon & Bard Group: Sophisticated Music Played with Feeling

The Simon & Bard Group, led by Fred Simon and Michael Bard, is hard to pin down to one category. The music on their new Flying Fish album, "Tear It Up," with jazz guitarist Ralph Towner, is partly improvisational, yet they're not really a jazz group. They're not a folk group either, though the com-

Mel Tillis

Ogg
positions and instrumentation have folk characteristics. And they’re certainly not a rock or pop group, though they produce music as concise and structured as a pop single. In short, they’re a little bit of everything.

The new album isn’t the hard-blowing session its title suggests. In fact, the dominant quality is lyricism. All but one of the pieces here were written by Simon, who plays keyboards, and they’re full of inventive themes, counter-themes, and abrupt tempo changes that make them as interesting to hear the twentieth time around as the first. Balancing Simon’s sophisticated, structured compositions is Bard’s emotional playing on saxophones and clarinet. What Bard may lack in chops he makes up for in feeling; his alternation of graceful, singing melody lines and intense, staccato bursts grabs the interest on almost every track. His extended solo on Lazlo’s Muse shows how much can be said in a few notes. [Bassist Steve Rodby and drummer Paul Wertico were recently replaced in the group by Phil Gratteau and Ken Haebich.]

The prominence of Ralph Towner’s name on the album cover is somewhat misleading, since his contribution to the album, as a sideman, is quite minimal. But I don’t begrudge the band this bit of hype—anything that will draw more people’s attention to this fine music is all to the good.

—Mark Peel

SIMON & BARD GROUP: Tear It Up.
Fred Simon (piano, Fender Rhodes, organ); Michael Bard (saxophones, synthesizer, clarinet); Steve Rodby (electric and acoustic bass); Paul Wertico (drums, percussion); Ralph Towner (twelve-string acoustic guitar); others. Let’s Do It; Lazlo’s Muse; City of Rangers; Octabloon; The Toast; Tools of Luxury. FLYING FISH FF 262 $8.98.

Lou Reed and Ken Haebich

Lou Reed’s “Legendary Hearts”: Passionate and Inspiring Rock-and-Roll

LOU REED’s new album, “Legendary Hearts,” just may be his best since the Velvet Underground closed up shop thirteen years ago. It is, in any case, of a piece with last year’s magnificent “The Blue Mask”—another shot of the hard stuff, rock-and-roll so passionately felt and stripped down that it makes most of what’s on the radio these days seem like so much aural flatulence.

A lot of the passion of “Legendary Hearts” comes from the musicians Reed assembled for it. They pull off the remarkable feat of sounding like a virtuoso version of the Velvets: slick and raggedy all at the same time, threatening to go out of control at any moment but always settling down to a serenely authoritative groove. Reed himself, on vocals and guitar, is in extraordinary form too.

Reed’s new songs for the album lack the autumnal cast of those on “The Blue Mask,” but they are, as brutally honest and poetically graceful as any he has written. The title song, in fact, aided by the soaringly beautiful lead bass line of Fernando Saunders, may be the single most heart-wrenching track of Reed’s career. As one writer has already suggested, the music on “Legendary Hearts” is the real urban blues of today, the sound of one brilliant adult male facing his demons head on and laughing them down. It’s an inspiring release, and the sound is splendid—clean as a whistle and one of the most realistic recordings of a live rock band I’ve ever heard.

—Steve Simels

LOU REED: Legendary Hearts. Lou Reed (vocals, guitar); Robert Quine (guitars); Fred Maher (drums). Legendary Hearts; Don’t Talk to Me About Work; Make Up Mind; Martial Law; The Last Shot; Turn Out the Light; Pow Wow; Betrayed; Bottoming Out; Home of the Brave. RCA A FLF-4568 $8.98, 0 AK1-4568 $8.93.
**Best of the Month**

Recent selections you might have missed

### POPULAR

- **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)
- **Donald Fagen**: *The Nightfly*. WARNER BROS 23696-1. "Nostalgia, surprises, and an irresistible beat." (March)
- **Michael Jackson**: *Thriller*. EPIC OE 38112. "Lives up to its title." (April)
- **Little Steven and the Disciples of Soul**: *Men Without Women*. EMI AMERICA ST-17086. "Genre music never sounded so good." (March)
- **Kate and Anna McGarrigle**: *Love Over and Over*. POLYDOR 422-810. "An aural delight." (May)
- **John McLaughlin**: *Music Spoken Here*. WARNER BROS. 23723-1. "Further explores and enlarges the acoustic/electric synthesis." (May)
- **Liz Meyer**: *Once a Day*. ADELPHI AD 2009. "From toe-tappin' joy to laded love in an album of classic country music." (April)

### CLASSICAL

- **Bartók**: *String Quartets Nos. 1-6*. CBS M 37857. "The Juilliard Quartet's third Bartók set ranks among the very finest." (May)
- **Beethoven**: *Piano Sonatas Nos. 4 and 11*. CBS M 36695. "Murray Perahia's first Beethoven recording is uncommonly convincing." (April)
- **Cesti**: *Orontea*. HARMONIA MUNI HM 1100/02. "Early Venetian opera returns to life in a fabulous performance...." (April)
- **Poulenc**: *Solo Piano Music*. EMI PATHE MARCONI C 069-73101. "A glowing new collection from Gabriel Yaredone....irresistible." (June)
- **Purcell**: *The Fairy Queen*. DG ARCHIVE 2742 501. "A peak in the performance of English Baroque music." (March)
- **Schumann**: *Symphony No. 3* ("Rhenish"). MANFRED OVERTURE. DEUTSCHE GRAMMOPHON 2532 040. "Magical and richly satisfying." (March)
- **Shostakovich**: *Symphony No. 8*, 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)

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**Kiri Te Kanawa's Mozart Opera Arias: Marvelous Music, Gorgeous Singing**

All too rarely, a recording comes around that fulfills, even exceeds, the highest expectations. Dame Kiri Te Kanawa's new Philips disc of Mozart opera arias is such a rare phenomenon. Its contents have evidently been chosen with care to include both reasonably familiar arias, from *Cosi Fan Tutte* and *Die Zauberflöte*, and such arcane items as Sandrina's double aria, with connecting recitative, from *La Finta Giardiniera*. In between lies Ilia's aria from *Idomeneo*, recently rescued from virtual oblivion. It suits Te Kanawa's exquisite art to perfection.

Both record sides start off with ravishing inspirations: "Ruhe sanft, mein holdes Leben" from Mozart's unfinished opera *Zaide* is an enchanting lullaby in the form of a full concert aria, and "L'amor, sord costante" from *Il Re Pastore* is a subtly orchestrated little masterpiece with an eloquent violin obligato (it dates from 1775, the year of the violin concertos).

Add to the charms of the repertoire the luscious, securely placed tones and admirably musical singing of Dame Kiri, a Mozartian of impeccable attributes. True, she tends to display more cool elegance than warm dramatic involvement, and, were I a carping sort, I would ask for a more sharply pointed textual detail here and there. I might even take Philips to task for dealing only with the artist and not with the music in the liner notes. But I'll happily settle for what this recital unquestionably offers: marvelous music and gorgeous singing. Alert, finely detailed conducting by Sir Colin Davis, expert playing by the London Symphony, and topnotch sound complete a picture of overall excellence. —George Jellinek

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COMPETITIONS for pianists, violinists, singers, and other musicians exist to single out the most gifted soloists among the rising generation of young artists. The winners are brought to the attention of the public, and the prizes and publicity do a great deal to further the careers of the young musicians.

Increasingly, the administrators of competitions have realized the importance of recordings in building careers of performers. For example, when Mihaela Martin, of Bucharest, Romania, won first place in the International Violin Competition of Indianapolis last fall, her prizes included $10,000, a gold medal, and more than seventy engagements over the next two years in the United States, Canada, and Europe. Also included in the prize package was a contract for two recordings on the Vox Cum Laude label. The first of these (VCL 9043, © VCS 9043) has now been released. On it Martin and Russian pianist Paul Ostrovsky play Schubert’s Duo Sonata in A Major and Stravinsky’s Divertimento, which they performed at Martin’s New York debut in Carnegie Hall in May. Reviewing her recital, the New York Times said: “Miss Martin combines the technical perfection our musical Zeitgeist demands with a distinct artistic personality in the grand tradition.” Her recital was described as “one of the most exciting debut concerts of the year.”

Ame Kiri Te Kanawa, whose new album of Mozart arias on Philips is reviewed in the “Best of the Month” section of this issue (see page 70), is also making a bid for recognition as a pop artist with a label all her own. Crossing over makes sense in this case since her other new album, a collection of Canteloube’s Songs of the Auvergne for London/Decca (0 LDR 71104, © LDR 571104), has climbed higher on the chart published by England’s Music Week than any previous Decca classical release. Dame Kiri’s new label is Kana, and the single (Kana-1), drawn from the Auvergne set, features the exhilarating shepherd’s song Bailer°. The flip side: Malurous Qu’a uno Fenna (Wretched the Man Who Has a Wife).

When First Lady Nancy Reagan appeared with the National Symphony Orchestra in Washington, she complimented the American soloist who is a U.S. citizen, must already have demonstrated outstanding professional ability, and the benefits of the prize are tailored to his or her individual needs. Always included are a cash award of $10,000 and major appearances at Lincoln Center and elsewhere. Born in 1950 in Waterbury, Connecticut, Elmar Oliveira was the first American violinist to win a gold medal in the Tchaikovsky Competition in Moscow (1978). At the Lincoln Center ceremonies when he received the Avery Fisher Prize, Oliveira said: “This is such an emotional occasion for me. One of the greatest compliments a musician can receive is the approval of his colleagues.” Among the ways in which Oliveira demonstrated the professional ability that qualified him for the Avery Fisher Prize was making records for CBS Masterworks, RCA, and Vox Cum Laude. Nevertheless, his prize includes a new album on Vox Cum Laude. Details of repertoire and release date have not yet been announced.
narrated the Ogden Nash verses to Saint-Saëns' *Carnival of the Animals* conducted by Mstislav Rostropovich. Her performance, which generated a great deal of publicity, so impressed Sultan Qaboos bin Said of Oman that he donated $300,000 to the National Symphony to endow the Nancy Reagan Chair of Narrative Music.

Television viewers can judge the Reagan/Rostropovich collaboration for themselves when a tape of the concert is broadcast in Exxon's Great Performances series on the Public Broadcasting Service on September 26. Later in the fall Mrs. Reagan and Maestro Rostropovich will be together again on Great Performances to produce a work to be performed by the Philharmonic's composer-in-residence, Jacob Druckman, that turns out to be a kind of introduction to the first time anywhere, and eight that were new locally, in six concerts at every Fisher Hall. All six concerts, laid out under the artistic direction of the Philharmonic's composer-in-residence, Jacob Druckman, were taped for later broadcast over the Exxon network of some 250 commercial and public radio stations nationwide.

Among the scores conducted by the Philharmonic's music director, Zubin Mehta, were Luciano Berio's *Sinfonia*, featuring the New Swingle Singers, and William Schuman's *Three Colloquies for horn and orchestra*, with Philip Myers as soloist. Both are works the orchestra commissioned, and the Berio has been recorded by CBS under the composer's direction. The Schuman is a likely candidate for release on New World Records.

Druckman is just one of several composers enjoying resident status with orchestras participating in a "Meet the Composer" program funded for the most part by Exxon and the Rockefeller Foundation. Each composer is asked to produce a work to be performed and recorded by the host orchestra; the recordings will be produced by Nonesuch Records. As it is, all but a few of the composers, including Druckman in New York, William Kraft in Los Angeles, and John Harbison in Pittsburgh, are well represented by current recordings, mostly on the CR1, Orion, and Nonesuch labels...William Mayer, a board member of CR1 (Composers Recordings, Inc.), saw his opera *A Death in the Family* performed for the first time by Minnesota Opera in March. The opera is based on the James Agee novel and Ted Mosel's play *All the Way Home*.

**Disc and Tape Reviews**

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

**RECORDING OF SPECIAL MERIT**


_Arabelle_ $140 $7.98, © 9140 $7.98.

Performance: Moving

Recording: Superb piano sound


"Forty Years"—A happy household—Slowly... "Fifty Years"—Prometheus chained—Extremely slow.

If ever a work deserved the adjective "grand," this is it. It begins with a scherzo that turns out to be a kind of introduction to a huge, virtuosic, Romantic sonata movement. But that is not even half of the piece. The rest of this musical autobiography consists of two large slow movements, the first lyrical and harmonious, the second meditative and tragic. What an ending!

Alkan was one of that handful of Romantic rhetoricians who could combine flash with musical substance. I doubt there is another serious, large-scale piano work between Schubert and Brahms that holds up as well as Alkan's Grand Sonata in musical and structural terms, and yet the piece is as dramatic as any opera. Ending with two slow movements does not at all make for boring listening, for Alkan's musical inventiveness is continually appealing.

Ronald Smith is not, perhaps, a super virtuoso, but if he doesn't storm all the heights in this music, he is very successful at bringing out its charm, a bit of the drama, and a lot of the depth. His playing is always attractive and moving, and the piano sound has just the right mixture of tonal quality, closeness, brilliance, and sweetness. _E.S._

**RECORDING OF SPECIAL MERIT**

J. S. BACH: Violin Concerto in A Minor (BWV 1041); Violin Concerto in E Major (BWV 1042); Concerto in D Minor for Two Violins (BWV 1043). Sigiswald Kuijken, Lucy van Dael (violins); La Petite Bande.


Performance: Wonderful

Recording: Excellent

If you do not yet have any recording of these often-coupled Bach violin concertos, I strongly recommend acquiring this one, and it is worth getting even if you already have one that uses modern instruments. The playing here by Sigiswald Kuijken, Lucy van Dael, and La Petite Bande is full of vitality, the balances are just right, and the sound of the early instruments is perfect for the music.

_S.L._

(Continued on next page)
J. S. BACH: Mass in B Minor. Helen Donath (soprano); Brigitte Fassbaender (alto); Claes H. Ahnsjö (tenor); Roland Hermann (bass); Robert Holl (tenor); Bavarian Radio Chorus and Orchestra, Eugen Jochum cond. ANGEL 0 DSC-3904 three discs $38.94, © 42Z-3904 $38.94.

Performance: Grand
Recording: Recording Good

J. S. BACH: Mass in B Minor. Lucia Popp (soprano); Carolyn Watkinson (alto); Eberhard Büchner (tenor); Siegfried Lorenz (baritone); Theo Adam (bass); Rundfunkchor Leipzig; Neues Bachisches Collegium Musica Leipzig, Peter Schreier cond. EUCD 301077-445 three discs $35.94.

Performance: Mannered
Recording: Recording Good

As if in response to Joshua Rifkin's recent "authentic" one-on-a-part Nonesuch recording of Bach's B Minor Mass, two German companies have released more conventional new readings by Eugen Jochum and Peter Schreier. Jochum's reading is in the Karl Richter tradition: he employs vast stately tempos, and lack of inner articulation, he keeps the long phrases intact and always reveals the underlying noble dignity of the music. The choral sound is sumptuous. The tortured motives of the "Crucifixus" float over the relentless bass ostinato, and the heavens open up in the Sanctor. The soloists in both recordings are excellent. While Jochum's in a restrained operatic appropriate to their conductor's concept, Schreier's are inhibited by trying to maintain an airiness that often seems at odds with their best musical instincts. Perhaps Jochum's approach sets us back a generation, but the grandeur and spaciousness of his performance are undeniably thrilling.


Performance: Respectable
Recording: Fairly good
Although the string playing here is generally excellent, leader Bernard Thomas's approach is a bit on the heavy side. The rhythm of the suite should be crisper and the dance movements brighter. The Mozart divertimentos are more successful; their inherent charm comes across despite the heavy bowing.

BRAHMS: Complete Works (see Going on Record, page 106)

RECORDING OF SPECIAL MERIT


Performance: Probing
Recording: Marvelously lifelike

The late Glenn Gould recorded little by Brahms. There seems to have been only one Brahms record in his discography before this one, a collection of shorter pieces issued twenty-two years ago and still in the catalog (CBS MS 6237). I don't remember hearing that record, but I'm happy to have heard this one—so characteristic of Gould in his probing individuality and yet so true to the essential Brahmsian character.

The first ballade is paced extremely deliberately. It is not an "expansive" approach but a stark and somber one, quite in keeping with the dramatic nature of the well-known Scottish folk ballad Edward on which the music is based. The same somber spirit pervades the second ballade and even mitigates the curious perkiness of the third, but the final one exhibits a radiance as persuasive and distinctive in its way as Claudio Arrau's marvelous performance for Philips.

It appears that Gould viewed these four pieces as components of a dramatic sonata structure wherein the third ballade begins a transition from darkness into light that is fully realized in the last, whose meditative concluding section is illuminated with convincing serenity. In the two rhapsodies also, the dramatic element is allowed to shine from within instead of being laid on externally, and they make great musical sense. The piano sound throughout is marvelously lifelike.

RECORDING OF SPECIAL MERIT

GLASS: The Photographer. Paul Zukofsky (violin); voices and instruments, Michael Riesman cond. CBS FM 37849, © FMT 37849, no list price.

Performance: Composer's own
Recording: Well-done studio mix

The photographer in question here is Eadweard Muybridge, one of the great pioneers of photography, whose famous galloping-horse series is considered the ultimate ancestor of the motion picture. Less known is that Muybridge shot and killed his wife's lover, one Col. Larkyns, at the Yellow Jack, that he was acquitted of the crime in a sensational trial, and then, after his wife's death, raised her child by Larkyns. This story forms the basis of a music/theater work by the Dutch director/designer Rob Malasch and composer Philip Glass.

The critics who reviewed the work's first performances at the 1982 Holland Festival talked a good deal about how it showed an evolution in Glass's style, but I think the striking thing about it is how much Glass has gone back to the magical style of Einstein on the Beach, still his most powerful and epic work. The notion of magic—tied up with repetition, ritual, tonality, simplicity, the notion of magic—is very important, perhaps essential, in Glass's music. I am not suggesting that The Photographer represents anything like a retreat; it is simply a question of where Glass's genius lies. Most recent music either looks inward or is highly objectified. Glass's music is like a communal evocation that reaches out and opens up a line of communication that is mysterious and thrilling. Glass is a medium, and his pieces are like seances. When they work, they conjure up spirits.

This is a studio recording produced by Glass himself and Kurt Munkacsi in the
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Prokofiev’s Sixth Piano Sonata

Prokofiev’s Sixth Piano Sonata is a fascinating work, but it has generally been in the shadow of the much more popular Seventh, with its wartime associations. Although RCA had a fine performance of No. 6 by Van Cliburn in its catalog for a few years, the big-name pianists generally seem to ignore the work. But in recent months two extraordinary new recordings of it have been released, both by fairly little-known pianists. The persuasiveness of the performances, both in outstanding sound, might well lead to the sonata’s being programmed more frequently in recitals.

James Boyk is an American pianist and an artist in residence at Caltech, where he also lectures on music in both the humanities and engineering divisions and teaches a course called Projects in Music and Science. He is also an audio consultant, writes philosophical articles on the art of recording, and lectures groups interested in music and electronics. The sound quality of his Prokofiev disc, identified as an “all-tube analog recording,” is surely a major factor in its exceptional impact: the piano sound is remarkably lifelike, but never larger than life, and the ambience of the smallish room where it was recorded (filled with utterly silent listeners) enhances this vividness most of all. In some cases a recording of exceptional quality enhances a good performance, but in others it only makes musical flaws more conspicuous. In this case, while the recording is remarkable and worth hearing as an example of how realistically piano sound can be reproduced, it is the performance that makes the record worth having. Boyk plays the very devil out of this sonata, not as a virtuosic “vehicle,” but very much from the inside.

Peter Donohoe, a thirty-year-old English pianist, was a joint winner of the second prize in the Tchaikovsky Competition in Moscow in 1982, a year when no first prize was awarded. On the evidence of his imported EMI/HMV disc of the Prokofiev Sixth Sonata and works by Stravinsky and Rachmaninoff, he appears to be a fully formed, mature artist of exceptional depth and power, gifted both with the poetic insight to penetrate to the heart of what he plays and with the skill to master its technical challenges. His Prokofiev is awesome in its breadth, its grasp of the grand design of the work, and its balance of subtlety and raw power. It is every bit as compelling a performance as Boyk’s, and it is unarguably more convenient to have it complete on a single side rather than spread over two, particularly since the digital recording is also superbly realistic and ideally focused.

Donohoe’s playing of Stravinsky’s Three Movements from Petrushka may at first seem a little self-conscious and restrained in comparison with the celebrated recording that Maurizio Pollini made at the same age for Deutsche Grammophon. But Donohoe’s steady rhythms and clear articulation of details may remind more than a few listeners of the durable excitement with which an earlier British musician, Sir Thomas Beecham, infused his performances through a similar approach. A Beechamesque expansiveness may be the last thing one would look for in this music, but in Donohoe’s capable hands it works no less well than Pollini’s steely drive, and it does call attention to the substance of the music as well as to its glitter.

The Rachmaninoff Étude Tableau offered as filler on the Stravinsky side of Donohoe’s disc may actually be the most imposing of the three performances. It is a fully realized drama in miniature that calls for the term “poet” to designate both the composer and the performer. I can’t imagine why Angel passed up this recording for U.S. release. I expect that we’ll be hearing more from Peter Donohoe, who may or may not turn out to be a specialist in the Russian repertoire. In the meantime, this beautiful recording is quite a calling card. Highest recommendation.

—Richard Freed

Prokofiev: Piano Sonata No. 6, in A Major, Op. 82. James Boyk (piano). PERFORMANCE PR-3 $15.98 (from Harmonia Mundi USA, 2351 Westwood Boulevard, Los Angeles, Calif. 90064).

HAYDN: Cello Concerto No. 1, in C Major; Cello Concerto No. 2, in D Major. Lynn Harrell (cello); Academy of St. Martin-in-the-Fields, Neville Marriner cond. ANGEL 0 DS-37843 $12.98, © 4XS-37843 $12.98.

Performance: Showy
Recording: Splendid

Haydn's boisterous Cello Concerto in C Major receives an equally boisterous performance here that reaches its climax in Lynn Harrell's outrageous cadenza, which out-Haydns Haydn. Harrell's more lyric side is brought out by the warmth of the D Major Concerto, which is lovingly performed by all involved. The digitally recorded sound is very good indeed. S.L.

MAHLER: Symphony No. 9, in D Major. Chicago Symphony Orchestra, Sir Georg Solti cond. LONDON 0 LDR 71058 two discs $25.96, © LDRS 71058 $25.96.

Performance: Brilliant but variable
Recording: Superlative

The London production crew spared no effort to make this digital recording of the Mahler Ninth Symphony by Sir Georg Solti and the Chicago Symphony the best ever sonically. They succeeded handsomely, recording in Chicago's Orchestra Hall, which I frankly prefer to Medinah Temple. The virtual absence of audible background hiss and an extraordinarily wide frequency and dynamic range throughout serve to lay bare Mahler's multistranded textures in the first and third movements as never before, and the delicate chamber-music-style episodes in the end movements sound as pristine as morning dew. Both sonically and in terms of orchestral brilliance of execution, this is a truly spectacular recording that is matched only by the James Levine/Chicago Symphony Mahler Seventh on RCA.

I wish only that Solti's interpretation were on the same remarkable level. Hair-raisingly virtuosic as the playing is in the third movement, Rondo-Burleske, it does not match the savagery of that on Karajan's Deutsche Grammophon recording. And though Mahler called for "the tempo of a leisurely Ländler" in the ironic second movement, Solti is just a mite too deliberate for my taste, and the music's "lift" and rhythmic vitality suffer. The elements of passion in the first movement and of spirituality in the last are better communicated for me by Karajan, Tennstedt, and Haitink. Solti's reading of the first seems decidedly externalized, and the colossal death-knell climax simply fails to achieve its effect. In the concluding adagio, Solti's reading is expressive, but it seems to me to stress the wrong things—details rather than overarching wholeness. The movement's first major solo entry for horn, which here sticks out like a sore thumb rather than blending into the texture, is a prime example. I think, this is a performance more for sound buffs than for dedicated Mahlerites. D.H.

RECORDING OF SPECIAL MERIT


Performance: Dazzling
Recording: Very good

Kyung Wha Chung is one of the most nimble-fingered of today's young generation of violinists. Moreover, as she demonstrates here, she seems incapable of anything but the most musical execution. Her Mendelssohn is fleet and passionate, especially in the later pages of the slow movement. More Germanically inclined listeners may take issue with her breakneck pace in the first-movement coda and the whole of the finale, but she brings it all off without a trace of strain or hysteria and with flawless articulation throughout. The Tchaikovsky performance is equally spirited, with an exquisitely poised slow movement and no cuts in the finale.

Charles Dutoit and the Montreal Symphony contribute handsomely to both performances. The London engineers also deserve credit for a remarkable job. The sound quality is consistently very good, especially on the Tchaikovsky side, which takes nearly

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YEARS may pass without any music of Jacques Offenbach being recorded, and here we are now facing a virtual flood tide: a new Angel digital recording of the much-recorded La Périchole and a batch of quite unfamiliar items derived from French radio broadcasts, released on the French Bourg label, and imported here by Qualiton. Any broadening of the recorded repertoire is to be appreciated, and Offenbach is always fun to listen to, so my overall reaction to this lively mélange is positive. But I also have some reservations about it.

La Périchole, that gem of an operetta, comes to us here in a highly polished and lushly recorded form that is almost too dignified for its own good. Michel Plasson conducts much of the music with engaging verve, though he occasionally lapses into charmless mechanical time-beating. For a plot that takes place in Peru, the presence of two Spanish singing stars can hardly be objectionable, particularly since both Teresa Berganza and José Carreras are in good form and handle their lines with assurance and involvement. Berganza’s mezzo is a bit strident now at forte volume, but her big numbers (the Letter Scene and “Je t’adore, brigand”) are deliciously insinuating. Gabriel Bacquier’s voice is rather worn by now, but, as always, he knows how to bring a character to life. His Viceroy, incidentally, is meaner than he is usually shown in film and handle their lines with assurance and handle their lines with assurance and involvement. Berganza’s mezzo is a bit strident now at forte volume, but her big numbers (the Letter Scene and “Je t’adore, brigand”) are deliciously insinuating. Gabriel Bacquier’s voice is rather worn by now, but, as always, he knows how to bring a character to life. His Viceroy, incidentally, is meaner than he is usually shown in more conventional interpretations. The version of La Périchole offered here is something more nearly complete than the recording (with Régine Crespin in the title role) that RCA licensed from its French affiliate, Erato, and released domestically some five years ago. The present performance also dispenses with the spoken narrative. La Périchole was introduced in Paris between Barbe-Bleu (1866) and Les Brigands (1869), two other Offenbach three-acters that are part of the current largesse. Barbe-Bleu appears on two discs; Les Brigands is reduced to a single disc of highlights. Both scores are top-level Offenbach, and they get enthusiastic performances here. The singing in Barbe-Bleu is particularly praiseworthy, but, since the set is unaccompanied by a libretto or helpful notes, I am unable to distribute specific praise. The singing in Les Brigands—except for the very fine Danièle Perriers—is only adequate, but the music is quite infectious, particularly the Police-men’s Chorus, the very model of Gilbert and Sullivan.

The other Bourg releases are one-acters from the period when Offenbach was handicapped by small budgets, a small Champs-Élysées theater (of which he became manager), and even certain laws limiting the number of actors he could put on stage. These operettes are slender in substance, with tiny combos providing the musical backgrounds. Le Violoneux (The Fiddler) of 1855 has a silly story and one rousing, redeeming tune; the singing on the record is quite poor, however. Les Deux Aveugles (The Blind Ones), of the same year, was a sensation at the time. It seems rather thin now, and the cast’s nondescript singing on this recording does nothing in the way of fleshing it out.

Croquefer (1857), an essay in utter zaniness, strikes me as a nineteenth-century Monty Python farce, with devastating satire on knighthood mixed with spoofs of such operatic targets as Les Huguenots, La Juive, and Guillaume Tell. There is a libretto with this one, but the orchestra sounds threadbare and the singing is atrocious. Chanson de Fortune (1861) builds a slender story around an earlier Offenbach hit tune set to words by Alfred de Musset. The song is charming and the singing, especially that of tenor André Mallabrera, is pleasing enough, but the disc suffers from scandalously inept sound editing. Lischen & Fritzchen (1864) explores the bilingual predicament of Alsatians with affectionate humor, but, again, the music deserves better singers.

The Bourg label seems to have made little effort to prepare its products for export. Librettos, when provided, are in French only, and the brief English synopses supplied are inadequate. The recorded sound of the productions, dating from 1976 to 1981, is basically good, but more care should have been given to balancing, editing, and other technical matters. Still, these releases do fill a gap. I recommend them all to specialists, and no operetta fancier can go wrong with Barbe-Bleu and Les Brigands.

George Jellinek


An Octet of Offenbach Operettas

The title page from an early edition of Offenbach's Bluebeard

STereo REVIEW
thirty-five minutes. Chung's violin is spot- 
lighted somewhat but not obtrusively so. 
There are almost a dozen LP pairings of the 
Mendelssohn and Tchaikovsky violin con-
certos, but this new one belongs very near 
the top of the list on all counts.  D.H.

RECORDING OF SPECIAL MERIT

MOZART: Piano Concerto No. 17, in G 
Major (K. 453); Piano Concerto No. 23, in A 
Major (K. 488). Richard Goode (piano); Or-
pheus Chamber Orchestra. NONESUCH  1 
D-794042 $11.98,  © D-794042 $11.98.

Performance:  Very good
Recording:  Outstanding

Although the A Major has always been one 
of Mozart's most popular concertos, there 
are fewer really distinguished recordings of 
it available now than one might have thought—and there are rather more of the 
G Major, though this new disc is the only 
one at present to offer the two together. 
Richard Goode's playing of both works is 
distinctively good, indeed, refreshingly sat-
sifying in every respect, and the collabora-
tion of the apparently conductorless orches-
tra is on the same level. Throughout both 
movements add up to less than a half-hour's 
playing time, why break at all? Otherwise 

MOZART: Divertimentos in D Major and F 
Major, K. 136 and 138 (see J. S. BACH)

RAVEL: Piano Concerto in D Major for the 
Left Hand; Alborada del Gracioso; Rapsodie 
Espagnole. Leon Fleisher (piano); Balti-
more Symphony Orchestra, Sergiu Com-
missiona cond. VANGUARD  1 VA-25014 
$8.98,  © CVA-25014 $8.98.

Performance:  Very good
Recording:  Idiomatic

Although nothing is said about it on the al-
bum, this recording marks a notable reap-
pearance by Leon Fleisher. One of the fin-
est American pianists, Fleisher has had se-
vere physical problems with his right arm in 
the last few years and has devoted his atten-
tion to teaching and conducting. Only re-
cently he started to play again—with both 
hands, though it is logical that he has be-
come an exponent of the powerful, enigmat-
ic, almost frightening Concerto for the Left 
Hand that was written at the very end of 
Ravel's creative life.

This is a whopping performance that 
made me realize what an epic work the con-
certo is. I wish the piano sound were more 
up front, but otherwise I recommend both 
the performance and the recording; they 
capture all the dark and scary brilliance of 
a great musical mind on the verge of mad-
ness. I am less enthusiastic about the other 
side. These are lush and scintillating re-
cordings of labored and jerky performances 
of works that should display Ravel's silken, 
misterioso Spanish style—and don't here. 
The price is right, though.  E.S.

141. Czech Philharmonic Orchestra, Fran-
tišek Vajnar cond. SUPRAPHON 1110 2967 
$9.98.

Performance:  Idiomatic
Recording:  Excellent

Supraphon has given us a few recordings of 
early Czech music and contemporary opera 
conducted by František Vajnar, but this ap-
pears to be Vajnar's first of music by a ma-
jor symphonist as well as his first with the 
Czech Philharmonic. It is a very persuasive 
account of Shostakovich's enigmatic vale-
dictory symphony, suggesting that Vajnar 
has a pronounced affinity for this compon-
er's music. He certainly seems well "inside" 
the Fifteenth Symphony, with its citations 
of Rossini and Wagner, its curious elegies, 
and its generally bittersweet air, and he 
draws first-rate playing from the orchestra. 
It should be noted that, while the labeling 
indicates two movements to a side, the 
break is actually made a few bars before the 
end of the second movement. Few listeners 
may even be aware of this, for the two mid-
dle movements are joined together almost 
seamlessly. Since these two movements are 
linked together and the first three mov-
ements add up to less than a half-hour's 
playing time, why break at all? Otherwise
this is a fine record. The elegiac trombone solo in the second movement is less polished than the one in Bernard Haitink's London Philharmonic recording (London CS 7130) but seems somehow more in character; the entire performance, in fact, exudes a spontaneity that makes Haitink's admirable interpretation seem a little mannered in comparison. The sound is very good, and the surfaces are quiet.

TCHAIKOVSKY: Violin Concerto in D Major, Op. 35 (see MENDELSSOHN)

TIPPETT: Triple Concerto for Violin, Viola, and Cello. György Pauk (violin); Nobuko Imai (viola); Ralph Kirschbaum (cello); London Symphony Orchestra, Sir Colin Davis cond. PHILIPS 0 6514 209 $12.98, © 7337 209 $12.98.

Performance: Authentic
Recording: First-rate
Sir Michael Tippett's Triple Concerto has a point in common with Elliott Carter's Second Siring Quartet in that the three virtuoso soloists required do not function as a unitary ensemble, but retain their individual character while interacting both with their fellow soloists and the orchestra. The result is a kind of organically developed tonal scenario. The first movement with its opening dissonant flourish introduces the "actors" and the "mise en scène" with thematic figures and interventional forms. It becomes increasingly animated and dense until it is abruptly interrupted by silence, which in turn is followed by a fascinating medium-slow interlude featuring tuned percussion. Next is a nearly static slow movement that is decidedly Asian-Balinese in atmosphere. Then, following a descending glissando for solo viola, there is a medium-fast interlude with spicy, untuned percussion occupying center stage. A cello arioso recitative brings on the finale, which culminates in a stunning collective cadenza.

This is at best a sketchy description of a complex, virtuoso score. Whether it is a masterpiece I can't say this soon after making its acquaintance, but it is certainly approachable enough for ears attuned to the mainstream twentieth-century musical styles. As sheer sound it is ear-tingling. The performance, by the same forces that participated in the world première in London in 1980, is a brilliant and totally committed execution. And the work's immense demands in terms of balance and tonal blend have been expertly met by Philips' recording engineers.


Performance: Neat as a pin
Recording: Excellent
Carl Maria von Weber's two symphonies, both in the same key and written within a month of each other, are products of his twenty-first year. Major masterpieces they are not, but they do make for pleasant listening in much the same way the early Schubert symphonies do. Already in the slow movement of No. 1 we hear pre-echoes of the romance-laden horns of Der Freischiitz, and the bright and delicious bits of rhythmic irregularity in the third movements of both works. Neville Marriner's fine British ensemble responds, as always, with a will and produces superbly crisp, taut renditions. The digital recording, by Academy Sound and Vision, Ltd., is absolutely A-1 throughout.

COLLECTIONS


Performance: Percussive
Recording: Exceptional
This is, I believe, the debut recording of Panayis Lyras, a young Greek-born pianist who had been performing as soloist with various American orchestras even before he started winning competitions in this country and abroad. Among his competition prizes is the silver medal he won in the Van Cliburn International Piano Competition in 1981, where these performances were recorded live—applause and all. The recorded sound, even without making allowances for recording under public-performance conditions, is quite exceptional: big, bold, and beautiful. Lyras' playing throughout this varied program is big and bold too—in fact, rather unreliedly so. There is no question of his technical equipment or his grasp of the Liszt sonata's structure, but I miss the subtlety that Barenboim and Brendel have brought to the work. It was imaginative to include one of Medtner's Fairy Tales; surely we ought to have the whole cycle on records by now. But even in Balakirev's glittering Islamey there is a want of subtlety and contrast: one is overwhelmed by this performance, when it would have been quite enough simply to be dazzled.

RECORDING OF SPECIAL MERIT


Performance: Live and vital
Recording: Very good
These two Met stars were in dazzling form at the joint concert on March 28, 1982, that served as the source for this album, and we have James Levine's assurance that the re-
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Modern Music for Orchestra

Roger Sessions, a New Englander, was long associated with Princeton University, but he spent a few fatal years in California, where he came into contact with Arnold Schoenberg, then teaching in Los Angeles. He shortly ceased being the chromatic expressionist he had been and became a dodecaphonist, a card-carrying Schoenbergian twelve-tuner.

The twelve-tone technique seemed to offer Sessions a new way of working. Suddenly his output doubled and tripled; music poured from him—not little bitty pieces but a whole string of symphonies and other large works. Three of these are offered in recent recordings by the Louisville Orchestra and the Boston Symphony, in the latter case paired with a symphony by the expatriate Polish composer Andrzej Panufnik.

Sessions's Divertimento for Orchestra, written in 1959, is a kind of transitional piece. Its dactyls on the Louisville Orchestra record, the Seventh Symphony of 1967, shows his new twelve-tone style full blown. The Concerto for Orchestra was commissioned for the centennial of the Boston Symphony and completed in 1981. It is an astonishing accomplishment for an eighty-five-year-old composer—as large-scaled, serious, and uncompromising as anything in Sessions's output, or, for that matter, in the modern literature.

There are those who will argue, but I feel that Sessions gave something up in these pieces, only a web or network of patterns, nor is the music pretty or engrossing or colorful or riveting. I want to love it—because I love Sessions, the man, and fully recognize his profound influence on American music and on me (I studied with him at Princeton after he returned from California)—but I find it hard.

Part of the problem is that few performers have really found their way to this music. The Louisville Orchestra, still out there punching after all these years, plays the Divertimento and Symphony No. 7 with spirit but without precision. The Boston Symphony, under Seiji Ozawa, does better with the notes of the Concerto for Orchestra, but they are less spirited.

The Boston Symphony recording is certainly a project worthy of note. Here are two contemporary works, one by Roger Sessions, a Brooklyn-born New Englander, and one by Andrzej Panufnik, a Pole living in England, both commissioned by an American orchestra and performed by it under a Japanese conductor, digitally recorded by an English company, Hyperion, and distributed in the U.S. out of Los Angeles by a French company, Harmonia Mundi. And it says on the disc, "Made in Germany." It figures.

The pairing of Sessions's Concerto for Orchestra and Panufnik's Sinfonia Votiva (Symphony No. 8) is not as farfetched as it might seem. Although almost twenty years younger than Sessions, Panufnik belongs with the group of composers who came to maturity between the two World Wars, falling under the spell of expressionism during those years and turning to atonality after the Second World War. He was born in Warsaw in 1914 and remained there through the horrors of World War II (all his earlier music was destroyed in the Warsaw uprising of 1944). He went to England in 1954 and has lived there ever since. His connections with Poland remain strong, however. The Sinfonia Votiva is dedicated to the Black Madonna of Czestochowa, the Polish national shrine, and it was composed at the height of the Solidarity movement.

Curiously enough, the similarities between Sessions and Panufnik are most evident in their most recent music, the Boston Symphony commissions, which are both post-Schoenbergian expressionist orchestral display pieces. But for a better, wider, and more appealing sampling of Panufnik's music, I recommend his Unicorn-Kanchana recording, in which he conducts the London Symphony Orchestra.

The Katyd Epitaph—Panufnik's pendant to the famous Threnody for the Victims of Hiroshima by Krzysztof Penderecki—is dedicated to the Poles massacred in the Katyn Forest at the end of World War II. Written in the Penderecki style, written in massive string clusters, is a vision of horrors, Panufnik's gentle, deeply mournful string sounds, backed only by a few dark winds and timpani, convey a very personal and interior vision. Landscape, for string orchestra, is laid out on a similarly broad plane. Even the two concerted works on the record—the Concerto Festivo, commissioned for the London Symphony's seventy-fifth anniversary, and the Concertino for Timpani, Percussion, and Strings, commissioned by Shell UK for a competition—are laid out in broad strokes and planes that combine suggestions of tonal imagery with a freer, dissonant palette.

Panufnik's music is simpler than the music of Sessions, less polyphonic, less symphonic, more blocklike and hard-edged. But in its very restraint there is an intense, underlying passion that I find original and striking. The performances on both the Hyperion and Unicorn-Kanchana discs are good to excellent, with superb digital mastering in both cases. Contemporary music only rarely gets the full treatment it gets here.

—Eric Salzman

SESSIONS: Symphony No. 7; Divertimento for Orchestra. Louisville Orchestra, Peter Leonard cond. LOUISVILLE ORCHESTRA LS 776 $7.98.

SESSIONS: Concerto for Orchestra. PANUFNIK: Sinfonia Votiva (Symphony No. 8). Boston Symphony Orchestra, Seiji Ozawa cond. HYPERION O A66050 $13.98 (from Harmonia Mundi USA, 2351 Westwood Boulevard, Los Angeles, Calif. 90064).

PANUFNIK: Concerto Festivo; Landscape; Katyd Epitaph; Concertino for Timpani, Percussion, and Strings. Kurt-Hans Goe dicke (timpani); Michael Frye (percussion); London Symphony Orchestra, Andrzej Panufnik cond. UNICORN-KANCHANA O DKP 9016 $15 (from Harmonia Mundi USA, 2351 Westwood Boulevard, Los Angeles, Calif. 90064).
cording documents it "exactly as it occurred on the stage ... no material taken from rehearsals, no remake recording sessions."

Both singers are bold, chance-taking performers who can communicate with electrifying intensity, which more than compensates for the few notes slightly off pitch and the few passages of imprecise articulation. There are, indeed, not many of either. The two stars produce a nice blend in their duets. Leontyne Price phrases her first response in "Mira o Norma" ravishingly, and where else can we hear a Suzuki of Marilyn Horne's caliber?

To be sure, Price has recorded the music of Aida and Leonora with more vocal refinement on earlier occasions, but she can still float the high B-flat in "Invan la pace" in a manner that seems to waft it straight to heaven—and then manage to duplicate the effect in the La Rondine aria. As for Horne, she tosses off the wild embellishments of Handel's "Vivi, tiranno!" with deadly accuracy and dazzles in the musically empty but fiercely acrobatic Rossini piece.

Levine's familiar brand of vitality is a great asset throughout, with special emphasis in the two overtures. The well-deserved applause that greets each selection may prove mildly annoying on repeated hearings, but that is the price one must pay for a live recording of an event worth commemorating. There is some lack of spaciousness in the recorded sound, but it is certainly vivid, the Vespri Overture in particular.

KIRI TE KANAWA: Mozart Opera Arias (see Best of Month, page 70)

RECORDING OF SPECIAL MERIT


Performance: Superb
Recording: Excellent

Although there is no mention anywhere on the album of the date(s) and precise locale of this excellent recording, I understand that it derives from two concerts André Watts gave in Tokyo in September 1980. They were recorded by CBS/Sony for release in Japan alone, but the gorgeous digital sound and the exceptional performances were obviously enough to move CBS Masterworks to release it here as well. Watts's playing is grand, noble, even heroic—in the best sense. Even The Children's Corner has an unusual dignity and grandeur here, although it is never without a gentle humor. Watts is an "up" pianist—not a romantic but not really a classicist either. I don't know how to categorize him. His playing has tremendous clarity and line, and yet it is intense and very personal.

Technically, this album is an exemplar of what live recording can be, even for that notoriously difficult instrument the piano. The one drawback of such good sound in a live recording, of course, is that every cough, sneeze, squeak, and snuffle from the audience is preserved in full sonic color for posterity.
In the heyday of rock-'n'-roll in the late 1960's and early 1970's, an axiom of rock as a way of life was: Never trust anyone over thirty. That maxim was heard less frequently as, one by one, rock's lawgivers had their own thirtieth birthdays. Now some of the biggest rock stars are passing over another great divide into their forties. But they are not being relegated to the geriatric circuit of tent shows and state fairs. Some of the most famous ones are very active these days on the screens of movies, TV, and home video.

On July 26 this year Rolling Stone Mick Jagger will have his fortieth birthday. Instead of gathering moss at some old-folks home, he has put on Oriental make-up for the role of the Emperor in The Nightingale, an adaptation of a classic story by Hans Christian Andersen. It premiered in June, is gearing up for a full-length feature film based on—what else?—a day in the life of Paul McCartney. He wrote the script for the musical drama, entitled Give My Regards to Broad Street, and will star as himself in this fictionalized account of a typical rock star's day. On hand to lend authenticity will be his real-life wife Linda Eastman and fellow ex-Beatle Ringo Starr (who turns forty-three on July 7).

McCartney and Starr will be rerecording favorite early Beatles material for the picture, which will also feature some solo McCartney material and some by his band Wings. Broad Street is slated for release early in 1984. In the meantime, McCartney is also working on a new album. It will be a follow-up to 1982's "Tug of War" and will contain some music recorded at the same sessions.

The acting bug bites ex-Beatles as well as Stones. Paul McCartney, forty-one on June 18, is gearing up for a full-length feature film based on—what else?—a day in the life of Paul McCartney. He wrote the script for the musical drama, entitled Give My Regards to Broad Street, and will star as himself in this fictionalized account of a typical rock star's day. On hand to lend authenticity will be his real-life wife Linda Eastman and fellow ex-Beatle Ringo Starr (who turns forty-three on July 7).

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AGED only thirty-six, David Bowie (born January 8, 1947) is still young enough and trim enough to show a good bit of skin in the role of the vampire lover in the current movie The Hunger with Catherine Deneuve and Susan Sarandon. Bowie, who switched from RCA Records to EMI America in the spring, is now in the midst of a two-continent tour. He played engagements in May and June in France, England, and Germany in support of his latest album, "Let's Dance," reviewed on page 86 of this issue. The upcoming July and August appearance dates on Bowie's "Serious Moonlight" tour are as follows: July 11, Quebec City; July 12-13, Montreal; July 15, Hartford, Conn.; July 18-19, Philadelphia, July 26-27, New York City; July 29, Cleveland; July 30, Detroit; August 1, Chicago; August 20, Dallas.

The exact birthdate of Lou Reed is not generally available. Irwin Stambler's Encyclopedia of Pop, Rock, and Soul gives it as "March 2, circa early 1940's," which must mean that Reed is forty ± 2 years. Reed has a feature film currently in movie theaters nationwide. It is Rock & Rule, an animated science-fiction fantasy in which Reed does not appear on screen. He provides the voice for the cartoon character Mok, a decadent aging rock star, and he wrote a couple of songs for the picture. Reed can be seen as well as heard in a ninety-minute video, "A Night with Lou Reed," taped at a concert last March at the Bottom Line in New York City. RCA VideoDiscs will distribute it in all media, including cable TV, video cassette, and video disc. The concert features Reed in some Sixties classics from his Velvet Underground days, a surprising reworking of Walk on the Wild Side, and songs from his new album, "Legenda-ry Hearts," reviewed on page 69 of this issue.

Two other members of rock's forty-plus club are Mike Love of the Beach Boys and Dean Torrence of Jan and Dean, both of whom have birthdays in March. This year Love turned forty-two and Torrence was forty-three. Both talked with them recently about "Rock 'n' Roll City," a joint record venture that features reworked oldies by the pair and their contemporaries Paul Revere and the Raiders, the Association, and the Ripp-echords. Available only on tape, it is sold exclusively at Radio Shack stores.
The Beach Boys got a great deal of publicity earlier this year when plans to have them perform again in Fourth of July celebrations on the Mall in Washington, D.C., were canceled by Secretary of the Interior James G. Watt. (The entertainer Watt chose instead was singer Wayne Newton, aged forty-one.)

When I asked Mike Love to comment, he reacted with amusement. "We're working on a song called 'Wait's Not Happening,'" he said. "The man doesn't know much about anything he's supposed to know about, and he doesn't know anything about music. We had played the Mall in 1980 and '81. In '81 our appearance was part of a TV special, The Spirit of America Spectacular—we thought we were doing a patriotic thing, playing the Mall for free on the Fourth.

"The public response [to the bar] was beautiful, though. There was this tidal wave of love and support for the Beach Boys. Nancy Reagan phoned us, and there was an editorial in the Wall Street Journal where they're usually writing about wars and the international monetary crisis."

At press time the Beach Boys had not decided where to play on the Fourth. "We've been offered thirty or forty places," Love said. "Budweiser, Miller—they're all into it." The band's schedule of seventy projected appearances this summer and fall does, however, include a concert in Washington on June 12.

Love is working on a recording with Brian Wilson. "He was in terrible shape emotionally, but he's lost over ninety pounds. I wrote this song for him. 'Brian's Back,' about three years ago, and now we'll use it." Love's got lots of plans for the Beach Boys, among them a concert for world peace, with Marvin Gaye and the Jacksons, and something he calls the U.S. Entertainer Olympics to raise funds for the 1984 U.S. Olympic team.

"We'll invite Mick Jagger to come over and do the fifty-yard dash—if he can make it that far."

P.W.

BRYAN ADAMS: Cuts Like a Knife. Bryan Adams (guitar, vocals); vocal and instrumental accompaniment. The Only One; Take Me Back; This Time; Straight from the Heart; Cuts Like a Knife; Let's Boogie; Baby Tonight; Take Me Back; This Time; Straight from the Heart; Cuts Like a Knife; Only One; Baby Tonight; Three Words; Don't Let Me Be Misunderstood; I'm Ready; The Last Time; Running to the Minute; It's Only Love; Before the Summer Goes By; The Fourth.

Recording: Very good sound. Performance: Excellent vocal and instrumental playing. Production: Good quality. If available, follow it.

THE BANGLES. The Bangles (vocals and instrumentals). The Real World; I'm in Love; Want You, Mary Street; How Is the Air Up There?; Faust EP; EP; EPT; 130$ $5.98.

Performance: Garage band recording. Promiscuous.

If it weren't for the 1982 copyright, you'd swear this record had been lying around since the late eighteen years. "The Bangles" is surely what the Beatles would have called themselves if they had been four girls, and this EP is exactly what they would have sounded like. It could pass as an artifact of the garage-band era: hook and instrumental accompaniment. Salt and Pepper, Royal Teens, and the early Beach Boys would have sounded like. It could pass as an artifact of the garage-band era: hook and instrumental accompaniment. Salt and Pepper, Royal Teens, and the early Beach Boys...

BERLIN: Pleasure Victim. Berlin (vocals and instrumentals). Tell Me Why; Pleasure Victim; Sex (I'm a . . . ). Metamorphosis; Metamorphosis.


Berlin is quintessential Eurodisco, so evocative of the ballroom melodrama of the Seventies that it sounds positively dated. Even the name Berlin brings back memories of Donna Summer and Giorgio Moroder, of black silk stockings and orgasmic moans at 124 beats per minute.

As the title suggests, "Pleasure Victim" is brimming with the kinky eroticism that finally forced disco into hiding—or psychotherapy. Kinkiest of all is the single Sex, with its call-and-response sexual litany. The album's lyrics are rife with touching and feeling—including a bit of smashing, cutting, and hurting—and with those long, wordless goodbyes that were the only aspect of relationships besides sex that disco ever seemed to notice.

John Crawford's rippling synthesizer compositions, suffused with some fairly gritty guitar work, are actually quite seductive—not just rhythmically (That Beat was always the most insidious thing about disco) but melodically as well. Too bad vocalist Terri Nunn isn't more convincing; Donna Summer's studio orgasmic sounds a lot more like the real thing.

MARTIN BRILEY: One Night with a Stranger. Martin Briley (vocals, guitar); vocal and instrumental accompaniment. Salt in My Tears; Just a Mile Away; She's So

Explanation of symbols:
① = eight-track stereo cartridge ② = stereo cassette ③ = digital-master recording ④ = direct-to-disc

Monophonic recordings are indicated by the symbol ②

The first listing is the one reviewed; other formats, if available, follow it.
David Bowie's Next Big Thing

Few record releases command the degree of eager expectancy and curiosity of a new album from David Bowie. Since the arrival of Ziggy Stardust, a huge (and, for rock, extremely diverse) audience has looked to each new Bowie release for signs of the next major trend. And, amazingly, he has delivered—not always great music but always something that proves to be an important new idea or direction. During the Seventies he unveiled one new Bowie after another as he popularized glitter, legitimized disco, and anticipated synth pop. “Let’s Dance” is Bowie’s first album since 1980’s “Scary Monsters,” and, as with all of his records, there’s at least a chance that somewhere in these grooves is the Next Big Thing. The surprise is that what’s new here is emotion—not the tortured identity crisis of some exile from Mars or the world-weariness of a gigolo but a simple, almost old-fashioned hunger for real love in the real world.

The songs on “Let’s Dance” work on two levels. First, you can dance to almost everything here. While that alone is not new for Bowie, this music represents something of a reversal for him. As co-producer he brought in Nile Rodgers (who when he isn’t producing Chic, is busy turning out funk jams that get banned on FM radio). Together they’ve given the album a leaner, harder sound than anything Bowie’s done recently. Synthesizers are out, horns and guitars are in. The beat is big and fat, even when it’s not fast, and the drums are mixed ‘way out front. Bowie’s vocals have more bite, from the obsessed, Iggy Pop-like crooning of China Girl to the achingly phrased chorus on Let’s Dance. And the recorded sound quality is outstanding.

On the second, deeper level, in his lyrics Bowie is trying to figure out where love fits in in the modern age. Is it a pose? A refuge? Salvation? He attacks that problem in the album’s opening track, the rave-up Modern Love: “There’s no sign of life/It’s just the power to charm/Never gonna fall for Modern Love.” The irony, of course, is that Bowie is probably as responsible as anyone else for the icy image of modern love that courses through New Wave and synth pop. The lyrics too are a reversal of Bowie’s previous stance. On Let’s Dance, for instance, he sings: “If you say run, I’ll run with you/If you say hide, we’ll hide./Because my love for you/Would break my heart in two/If you should fall into my arms/And tremble like a flower.”

Does this mean that love is the Next Big Thing? Stranger things have happened.

—Mark Peel

DAVID BOWIE: Let’s Dance. David Bowie (vocals); vocal and instrumental accompaniment. Times Square; Without You; Crochet; Criminal World; Cat People (Putting Out Fire); Shake It. EMI AMERICA SO-17093 $8.98, © 4XO-17093 $8.98.

Sambaturo, Chuck Kirkpatrick (vocals). Everybody Oughta Make a Change. I’ve Got a Rock ‘n’ Roll Heart; Pretty Girl; Crosscut Saw; The Shape You’re In; Ain’t Going Down; and four others. WARNER BROS./DUCK 23773-1 $8.98, © 23773-4 $8.98.

Performance: Very good
Recording: Very good

Eric Clapton assembled a fine band for this date, including guitarist Ry Cooder. He and Clapton sound eminently comfortable with each other whether they are trading eight-bar fills in "chug" choruses or Cooder is playing righteous rhythm to Clapton’s lead. It may have been Cooder who suggested Sleepy John Estes’s Everybody Oughta Make a Change (the head arrangement sounds like Cooder’s), and it was probably Clapton’s idea to play Crosscut Saw in tribute to Albert King’s classic performance.

Clapton’s own songs are variable. Pretty Girl and Man in Love, written for his wife, have the sentimentality usual in such offerings. Man Overboard suffers from blash lyrics, and Ain’t Going Down owes too much in its minor-chord structure to Bob Dylan’s All Along the Watchtower. The strongest new entries are The Shape You’re In (the girl is boozing) and Slow Down Linda (the girl’s hyper). Clapton continues to sing in a bluesy voice that’s more acquired than felt, but the shared guitar romps with Cooder make this a very enjoyable album.

PLACIDO DOMINGO: My Life for a Song. Placido Domingo (vocals); orchestra. Bésame Mucho, I Don’t Talk to Strangers; Remembering, Autumn Leaves; There Will Be Love; and five others. CBS FM 37799, © FMT 37799, no list price.

Performance: In the grand style
Recording: Very good

This album of MOR pop songs performed by tenor Placido Domingo is conceived in the grand style and manner of some of his illustrious predecessors. Richard Tauber, Fritz Wunderlich, and Richard Tucker all made albums similar to this one, collections of pop “classics” orchestrated symphonically, with the star voice spotlighted and all hell breaking loose vocally at the slightest opportunity. The gaudiest fireworks here occur during Bésame Mucho, which Domingo sings to the top gallery with all of the fervor passion of a Don José trying to convince Carmen to put down her cigarette just for a moment. In the quieter songs, such as Autumn Leaves, Domingo still gives his fans their money’s worth, in this case with a performance so somber that he may as well be announcing the onset of World War III as lamenting a finished love affair. Great bravura fun.

MARIANNE FAITHFULL: A Child’s Adventure. Marianne Faithfull (vocals); instrumental accompaniment. Times Square; The Blue Millionaire; Falling for Grace; Marianne and Comin’ Home; and three others. ISLAND 90066-1 $8.98, © CS 90066-1 $8.98.

Performance: One great track
Recording: Languid

Marianne Faithfull is rapidly turning into our pre-eminent poet of the eternal hang-
over. Her music is increasingly woozy and guilt-ridden, and she sounds as though she's seen empires rise and fall through the bottom of a shot glass. Personally, I'm a fan; her voice gives me shivers no matter what the setting. But this album, in which her spasms of conscience are backed in a lethargic quasi-disco style that seems to be the coming thing in international pop, is pretty tough sledding. There's one tremendous exception, however—a stunning political song, Ireland. Understated, haunting, it says more about the continuing troubles over there than anything I've heard or read. Her music is increasingly woozy and etic quasi-disco style that seems to be the coming thing in international pop, is pretty tough sledding. There's one tremendous exception, however—a stunning political song, Ireland. Understated, haunting, it says more about the continuing troubles over there than anything I've heard or read.

Jeff Kent by Ellie Greenwich, whose mate-

Elly (vocals); vocal and instrumental accompaniment: Ca's Got the Measles; Little Billy Wilson/Shenandoah Falls; My Old Kentucky Home; The Single Partner Waltz; Coal Mining Woman; Monkey Medley; and six others.

ROOSTER 120 $7.98 (from Rooster Records, RFD 2, Bethel, Vt. 05032).

Performance: Front-porch friendly
Recording: Variable

CATHY FINK: Doggone My Time. Cathy Fink (vocals, banjo, guitar, fiddle); vocal and instrumental accompaniment: Ca's Got the Measles; Little Billy Wilson/Shenandoah Falls; My Old Kentucky Home; The Single Partner Waltz; Coal Mining Woman; Monkey Medley; and six others.

ELLEN FOLEY: Another Breath. Ellen Foley is also quite proficient on guitar, able to take first prize in the State Folk Festival's old-time banjo contest.

Foster and Western swing. The only woman instrumentalist in Monkey Medley and Cottonpatch Rag. I'd say "Doggone My Time" is a pretty good way to spend a half-hour or so. A.N.

RECORDING OF SPECIAL MERIT

ELLEN FOLEY: Another Breath. Ellen Foley (vocals); vocal and instrumental accompaniment: Ca's Got the Measles; Little Billy Wilson/Shenandoah Falls; My Old Kentucky Home; The Single Partner Waltz; Coal Mining Woman; Monkey Medley; and six others.

ROOSTER 120 $7.98 (from Rooster Records, RFD 2, Bethel, Vt. 05032).

Performance: Front-porch friendly
Recording: Variable

CATHY FINK is a performer of old-time and traditional music who is best known for her collaboration with Duck Donald. On this, her first solo album, she moves through a diverse program, ranging from original novelty songs and instrumentals to Stephen Foster and Western swing. The only woman to take first place in the West Virginia State Folk Festival's old-time banjo contest, Fink is also quite proficient on guitar, able to pick out a sophisticated melody and counter line apart from the usual thumb-and-finger strum. She is a far stronger as a picker than as a singer—she has a narrow range, little control, and a rather colorless voice—but she does some interesting and creative things with the vocal equipment she has. She works best, however, with vocal and instrumental accompaniment, such as on Patsy Montana's That's Where the West Begins, or when acting strictly as an instrumentalist in Monkey Medley and Cottonpatch Rag. I'd say "Doggone My Time" is a pretty good way to spend a half-hour or so. A.N.

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Champaign Diversifies

Champaign—named after the group's home town of Champaign, Illinois—made a very promising debut two years ago with "How 'Bout Us," a wonderfully refreshing album that immediately gained wide crossover appeal for its sweet soul sounds. Evidently the group has been rethinking its direction in the interim, for "Modern Heart," its second album, is far more eclectic in approach, offering a diversity of styles and genres. At least a few of the tracks are bound to appeal to anyone who likes well-crafted pop music.

The opening selection, Let Your Body Rock, is a rakish uptempo rocker that may jar those expecting the gently sentimental turns she—don't—love—you—like—I—do item that Foley or marriage, and the caller may be proposing either obscene acts or marriage, and the―often—cold-hearted—the—song's—instincts—first-rate. With "Modern Heart," Champaign certainly has another winner.

—Phyl Garland

CHAMPAIGN: Modern Heart. Champaign (vocals and instrumentals). Let Your Body Rock; Try Again; Party Line; Cool Running; Walkin'; Keep It Up; Love Games; Get It Again; International Feel. COLUMBIA FC 38284, © FCT 38284, no list price.

The group's versatility is demonstrated time and again—in the enticing Caribbean flavor of Cool Running, for example, and in the delightful a cappella harmonizing on Walkin', which has all the charm of an old-time streetcorner do-wop session, the sort of thing that inspired some of the best early rhythm-and-blues. The prettiest cuts here are the ballads. Try Again, which sounds like a sure-fire hit, and the lushly interpreted Love Games. Through all the variety, the quality of songwriting and performance is consistently first-rate. With "Modern Heart," Champaign certainly has another winner.

—Phyl Garland

GROUP'S SUCCESS

On Boys in the Attic, Foley sounds something like Ronnie Spector of the Ronettes but with a much thicker tone. The two most striking cuts are Nightline, an ambiguous song in which a midnight caller may be proposing either obscene acts or marriage, and I Don't Love You Like I Do, an average track which sounds something like Ronnie Spector of LaBelle.

The Abominable Showman.

THIELMA HENDRYX. Thelma Houston herself. Her talent deserves more sympathetic handling. C.A.

RECORDING OF SPECIAL MERIT

GREG KIHN BAND: Kihnspiracy. Greg Kihn Band (vocals and instrumentals). Jeopardy; Fascination; Tear That City Down; Walkin' to Myself; Can't Love Them All; I Fail to Pieces; Someday; and three others. BERSERKLEY 60224-1 $8.98, © 60224-4 $8.98.

Performance: Inspired
Recording: Very good

If this engaging pastiche of textbook rock-'n'-roll doesn't raise Greg Kihn from cult figure at least to the semi-big time, it'll get him thrown in jail. This isn't a conspiracy; it's grand larceny. Kihn swipes rockabilly guitar intros from Buddy Holly and blues shuffles from the J. Geils Band. He rifles Duane Allman for the shimmying slide lead of Can't Love Them All and takes turns borrowing phrasing from Peter Wolf and Tom Petty for Talking to Myself. And that's only the overt stuff. Just about everything on "Kihnspiracy" has the familiar feel of a spin across the FM dial. But before passing sentence, consider that Kihn's piracy is also great rock-'n'-roll. And what better mitigating circumstance can there be than that?

M.P.

RECORDING OF SPECIAL MERIT

NICK LOWE: The Abominable Showman. Nick Lowe (vocals, guitar, bass). Paul Carrack (vocals, keyboards); other musicians. We Want Action; Raging Eyes; Cool Reaction; Time Wounds All Heels; Man of a Fool; and seven others. COLUMBIA FC 38589, © FCT 38589, no list price.

Performance: Fun
Recording: Nice

Nick Lowe's new, post-Dave Edmunds band seems to have jelled finally, and this
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The album's greatest failing, however, is one in which the band, Men at Work, comes up disappointmenting me, and I'm not exactly sure why. I think part of it is that in spite of a few memorable singles (heard in a Love Song; Can't You See Fire on the Mountain), the members of MBT can't seem to write an album's worth of material that matches their skill as musicians. "Just Us" is a case in point. New keyboard player Ronnie Godfrey has contributed a novel little Southern rock tune, Time Don't Pass By Here, Testify: Long Island Lady; Wait for You, and four others. Warner Bros. 23803-1 $8.98, © 23803-4 $8.98.

Performance: No surprises

Recording: Excellent

Albums by the Marshall Tucker Band almost always end up disappointing me, and I'm not exactly sure why. I think part of it is that in spite of a few memorable singles (heard in a Love Song; Can't You See Fire on the Mountain), the members of MBT can't seem to write an album's worth of material that matches their skill as musicians. "Just Us" is a case in point. New keyboard player Ronnie Godfrey has contributed a novel little Southern rock tune, Time Don't Pass By Here, about what it might be like to die and be buried, and the band comes awfully close to realizing its jazz potential on Paradise. Still, this is a rather limited album. There aren't any really strong hit tunes or even enough blues, boogie, or Toy Caldwell guitar work here to satisfy the pickers out of the songs sound derivative of MBT's earlier efforts or of the new-defunct Wet Willie (Wait for You), and if the rent-a-string section had played one more crescendo, I think I would have tossed this out the window. A.N.

MEN AT WORK: Cargo. Men at Work (vocals and instruments): Dr. Heckyll & Mr. Jive; Overkill; Settle Down My Boy; Upstairs in My House; No Sign of Yesterday, and five others. Columbia QC 38660, © QC 38660, no list price.

Performance: Bracing

Recording: Very good

Men at Work all but singlehandedly pulled CBS Records up from depression to prosperity with their five-million-seller debut album, "Business As Usual." Even as I listen to "Cargo," the group's new album, "Busi- ness As Usual" is still near the top of the charts. "Cargo" doesn't have a blockbuster like Who Can It Be Now or Down Under, but it's got the same basic strengths as its predecessors: accomplished melody writing and clean, bracing arrangements. The length to which Men at Work will go to graft a good, hummable tune on an otherwise trivial bit of fluff (such as Dr. Heckyll & Mr. Jive) shows real dedication. Although the band isn't gifted with dazzling chops, with hooks like these no one is likely to notice.

I ran into trouble with the lyrics, however. They're not inept, really. It's just that Colin Hay writes like a graduate of the Fa- mous Songwriter's School. His lyrics are so sober and self-referential, he must think he has to be serious to be taken seriously. All through "Cargo" he's saying he's depressed, paranoid, lonely, burned-out, battered, or hung over. But you'd never know it listening to drummer Jerry Spenser and bass player John Rees snap out their punchy, colorful rhythms. Hay's bright sax breaks, oh, well, quibbling with the lyrics here is probably about as profitable as betting against Men at Work's continued success. M.P.

WILLIE NELSON: Tougher Than Leather. Willie Nelson (vocals, guitar): instrumental accompaniment. My Love for the Rose; Changing Skies; Little Old Fashioned Kar- ma; Somewhere in Texas; Beer Barrel Polka; Summer of Roses; and five others. Columbia QC 38248, © QC 38248, no list price.

Performance: Limp

Recording: Sublime

When Willie Nelson recorded his "Red Headed Stranger" album eight years ago, the world shifted slightly on its axis. Hailed not only as a brilliant country record but also as a religious parable with autobiographical overtones, the concept album went on to earn Nelson—and country music—an astonishing new following of rock brethren. Country and western music, as it was still called then, was never the same afterward, but many feel that Nelson himself has never again come close to matching that album.

Nelson's newest release is a concept album that could be tagged "Son of Red Headed Stranger." Like its predecessor, "Tougher Than Leather" concerns passion and gunplay on the Western frontier, and the telling again employs allegory, personal allusions, and recreating musical themes. The late Noel Coppage once referred to "the little extra touches of mood, color, atmosphere, and attitude" in Nelson's original horse opera. In listening to "Tougher Than Leather," it is precisely those qualities that one misses for but never quite finds. Certainly much of the impact of "Red Headed Stranger" came from Nelson's unerring choice of material and his mixing of original narrative songs with well-known classics among them Blue Eyes Crying in the Rain and Can I Sleep in Your Arms (Tonight, Lady?)—to flesh out the story and add poignancy.

Nelson wrote all but one of the songs on "Tougher Than Leather," and they are all uniformly lacking in strong, memorable melodies. Without Nelson's credit, not one song here could stand alone on the hit parade. The first single, "Little Old Fashioned Karma," works nicely in context but sounds positively ludicrous coming alone out of a radio.

The album's greatest failing, however, lies in the concept itself. Almost everyone can identify with the Red Headed Stranger who, "wild in his sorrow," shot his wife and...
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I have been more than a little disappointed by the albums Rufus has released since the departure of lead singer Chaka Khan. Of course, it would be difficult for any group to recapture such a loss, since Khan was one of the most sensationally electrifying singers in popular music today. But she also lent the group a special sound; her piercing soprano presented a stark contrast to the mellow male voices surrounding it. Without her, Rufus sounds much less special. The first side of "Seal in Red," produced by George Duke, is competent and workmanlike but simply does not generate much excitement. The pace picks up on the second side with a peppery dance tune, "Blinded by the Boogie," and the lilting "I'm Saving This Love Song," which sports a few interesting changes. I can hear Chaka singing the lyrics rather than Rufus. Perhaps next time she'll be provided with a more capable front man, who has the potential to transcend the workaday world by personifying his own personal values and dreams. Rufus should definitely carry more of a punch, for the group now lacks the punch and excitement of their early years. The group, however, has made some sacrifices. The album is more correct than the group's previous album, but there is still the feeling of boredom. For long-suffering hard-rock fans, Night Ranger's "Dawn Patrol" says, "I told you so."

Kenny Rogers: We've Got Tonight. Kenny Rogers (vocals); vocal and instrumental accompaniment. We've Got Tonight (with Sheena Easton); Scarlet Fever; Farther I Go; No Dreams; All My Life; How Long; and four others. LIBERTY LO-51143 $7.98, @4LO-51143 $7.98, &8LO-51143 $7.98.

PERFORMANCE: STUCK BETWEEN FLOORS. Recording: Soft and squishy

Kenny Rogers spent the first half of his career jumping from one bandwagon to another, but now he owns the whole darn fleet, so it doesn't really matter what kind of records he puts out. People will still buy them, the way they do black-velvet paintings, and, in both cases, they'll think they've bought real art. People who love Kenny Rogers, of course, love him for something other than his music. They see him, as critic Mikal Gilmore correctly pointed out, as a unifying symbol for shared ideals, as a man who has transcended the world by personal and social attainments that are far beyond the basic American Dream. I suppose that is all well and good, but there is still the music.

Rogers's strong suits have always been soft love ballads and countryish story songs, and on "We've Got Tonight" he concentrates exclusively on the former. He moves through most of these romantic pop ballads as if he really means them, and he does some nice things: a couple of bent notes here and there that work a subtle seduction and several believable readings of despair. The problem is, the arrangements are so vacuously packed and lifeless as to smother whatever fires Rogers tries to start, and, with no less than six producers at the controls, the result is an album of sophisticated, easy-listening, zombie music. A.N.
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SOFT CELL: The Art of Falling Apart. Soft Cell (vocals and instrumentals). Forever The Same, Where the Heart Is; Numbers; Heat; Kitchen Sink Drama, Baby Doll; and four others. SIRE 23769-1 $8.98, © 23769-4 $8.98.

Performance: Memorably awful  
Recording: Okay

Soft Cell's second LP underscores the flaws in attitude and aptitude that may not have been quite so obvious on the duo's first, "Non-Stop Erotic Cabaret." Thanks to the enormous success of the single "Tainted Love," the group "The Art of Falling Apart" is a series of vignettes of moral depravity peopleed with pill-popping housewives, porno queens, and psychopaths.

Far from helping us understand any of these people, vocalist Marc Almond and electronic instrumentalist David Ball prefer to exploit them for their shock value. "Falling Apart" is like an invitation to peek through a telescope into someone's bedroom. If this smarmy voyeurism isn't bad enough, there's the music. Ball's "arrangements" are either dull or jumbled messes of stodgy percussion and droopy layers of synthesizer sound that are as apt to collide as to cohere. Almond's vocals are even worse: flat, affected, and utterly without a sense of rhythm.

The bonus 12-inch single, however, a Hendrix medley (Hey Joe, Purple Haze, and Voodoo Chile), may be a collector's item, at least. It is without a doubt the most dreadful cover of all time. Almond sings, "I caught her messin' round with another man" with all the intensity of a store clerk giving directions to the restroom. This release is not merely wretched but one of those rare albums that deserve the label "deplorable."

M.P.

THE TEMPTATIONS: Surface Thrills. The Temptations (vocals); instrumental accompaniment. Bring Your Body Here; One Man Woman; Show Me Your Love, Love on My Mind Tonight; and four others. GORDY 6032GL $7.98, © M75-6032 $7.98.

Performance: Temptatious  
Recording: Excellent

Next year will mark the twentieth anniversary of "Meet the Temptations," the first album by one of the most durable singing groups on the pop scene. Some forty albums and countless in-person appearances later, the group is still on top. Their singing style, coordinated garyons, and choreographed expressions have been widely imitated and have spawned two successful single acts: Eddie Kendricks and David Ruffin. When the two defectors came back for a brief reunion last year, they undoubtedly gave the Temps a boost, but now it's back to business as usual. Judging by the group's new album, "Surface Thrills," business ought to be quite good in 1983. No, this is not as memorable a set as "Psychedelic Shack" or "The Sky's the Limit," but it's a thoroughly fine album that shows the Temps in excellent form and contains enough good material to make listening from beginning to end a worthwhile experience.

The title song has an attractive traditional quality, and Show Me Your Love sug-

gests a Lionel Richie ballad. My favorite is The Seeker, which deals with a flower child in quest of an identity. I care least for Bring Your Body Here, a nod toward that tiresome, fade, aerobic exercise. C.A.

MEL TILLIS: After All This Time (see Best of the Month, page 68)

RECORDING OF SPECIAL MERIT

PETE TOWNSHEND: Scoop. Pete Townshend (vocals, guitars, keyboards, bass, drums). So Sad About Us/Brer: Squeezebox; Zelda; Politician: Dirty Water; Circles; Piano: Tipperary; Unused Piano: 'Quadrophenia'; Melancholia: Bargain, Things Have Changed; Popular: Behind Blue Eyes; and twelve others. ATCO 90063-1 two discs $13.98, © CS 90063-1 $13.98.

Performance: Genius at play  
Recording: Variable

This is a collection of Pete Townshend's solo demos from over a period of nearly twenty (!) years. They range from the sublime to the deliberately ridiculous, but they are almost always fascinating and, in some cases, even more powerful than the finished versions of the same songs that the Who churned out. Predictably, stuff from the "Who's Next" period comes off best (Townshend's writing was really at a peak at that point), but there's much else to admire, including a stunning acoustic version of this early So Sad About Us and a truly mad proko-dub version of the ever enigmatic Magic Bus. Townshend's disappointing Eighties output aside, it's becoming increasingly obvious that he's the most important figure to have emerged from the whole British rock explosion, and this set provides a marvelous insight into his compositional process.

S.S.

RECORDING OF SPECIAL MERIT

PORTER WAGONER: Viva. Porter Wagoner (vocals); instrumental accompaniment. Thin Cowboy's Hat; I Thought I Heard You Calling My Name; Heaven, Hell or Macon; We Can't Stop; Green Grass of Home; His and Hers; and four others. WARNER BROS./VIVA 23783-1 $8.98, © 23783-4 $8.98.

Performance: Gon-u-wine  
Recording: Variable

Ask Porter Wagoner the secret of his considerable success, and he will tell you that it's "sincerity." Is there a human alive who doubts Porter ever actually used that country laxative he hawked on his TV show? But the question at hand is, can Porter, fresh from a face lift and with his peroxide pompadour now a mass of corn-yaller curls, go on West to record an album and still retain his, well, authenticity? The answer, as demonstrated on "Viva," is a resounding "yes." Producer Snuff Garrett has compromised none of Porter's country sensibility. The songs include such stalwarts as Green Grass of Home, a couple of story songs that only Porter could pull off in his special way, and a Wagoner original, Bottom of the Fifth, that is about as fine a country song as I've ever heard. To top it off, the arrangements are as sparse and lean as the Wagonmaster himself. It is

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JULY 1983
The Return of Sly Stone

ANYONE who remembers Sly Stone’s glory days in the Sixties and his sad, dry years in the early Seventies should rejoice at the release of his excellent new album on Warner Bros., “ Ain’t But the One Way.” Everything we valued in his old work is restored: the long, teasing horn lines, the syncopated organ playing, the orchestrated ensemble vocals, and the pixieish humor.

Though touted in the Sixties as a social critic, and even a demi-deity with a mystical glow, Sly Stone was always basically more-no less-than a genius at orchestration and a consummate entertainer. His decline was due in part, I think, to his taking himself as seriously as his more fervent admirers did. Now, thirteen years since his last hit (he released one flop in 1976 and two in 1979, the last a sordid attempt to dis-cover earlier hits), he returns in a burst of glory. I defy anyone not to dance to his new album—or at least to want to dance to it.

The songs are Sly’s usual combination of street-smart patter, hazy philosophizing, and sheer nonsense. His lead vocals are guttural and mumbled, as if he’s not quite sure how listeners will react, and most of the lyrics deal with reclaiming identity after baffling experiences. But his sense of humor is intact, as evidenced by his imitation of Ray Charles on L.O.V.I.N.U. and his reprise of an early Kinks hit, You Really Got Me, followed by a chuckle and the question, “Is it Memorex?”

The closing cut, High, Y’All, is a revision of Sly’s Sixties blockbuster I Want to Take You Higher. Here it’s given a massive orchestral treatment and ends with a prolonged ensemble vocal chant, “How could a would not could not would?”—which recalls the old playground tongue-twister, “How much wood could a woodchuck chuck if a woodchuck could chuck wood?” There’s also a brief, forty-four-second cut, Sylvester, that has Sly doodling on the organ and free-associating lyrics about his past fame, punctuated by his charming, nervous, abrupt laughter. It doesn’t make any sense, but Sly Stone has always dealt in wonderful nonsense. It’s clear at least that he very much wants to come back with this comeback album. He’s sure got my vote.

—Joel Vance


Performance: Terrific
Recording: Good

“ The Jackie Wilson Story” contains all of his hit singles and a few odd album cuts. Wilson’s range and energy easily allowed him to be either a crooner or a shoutier as the occasion demanded. One of his biggest pop successes was the hammy Night, sung à la Mario Lanza—and sung just as well as Lanza might have done it. Wilson also had a sense of humor. For example, on Baby Workout, a boiling “jump” number, he parodies Elvis. Before starting Motown, young Berry Gordy, Jr., co-wrote five Wilson hits, including Reet Petite and Lonely Teardrops. In the late Sixties Wilson adapted himself to the Motown sound with Your Love Keeps Lifting Me (Higher and Higher), which Rita Coolidge reprised many years later. Wilson’s pure tone, bravura all-is-ups-over vocal tricks, and great timing gave him a distinctive style. Some of the cuts here are hopelessly, even ludicrously, dated by their period arrangements, but Wilson’s performances transcend the decades. This collection should help him regain his rightful place in pop-music history.

J.V.
JAZZ

RECORDING OF SPECIAL MERIT

AKIYOSHI/TABACKIN BIG BAND:
Salted Gingko Nuts. Toshiko Akiyoshi/Lew Tabackin Big Band (instrumentals). Elusive Dream; Lazy Day; Time Stream; and three others. ASCENT ASC 1002 $10 (from Ascent Records, 39 West 94th Street, New York, N.Y. 10025).

Performance: Bountiful

Recording: Very good

Recorded in 1978 and until now available only in Japan, where American jazz is often mindset. Salted Gingko Nuts by Lew Tabackin, the most breathtaking of which is 'Chasing After Love.' The charts alone earn laurels for Toshiko Akiyoshi, and she exhibits equal versatility on the piano. I'm hooked on gingko nuts persisting a la Akiyoshi/Tabackin.

C.A.

DOC CHEATHAM AND SAMMY PRICE: Black Beauty. Doc Cheatham (trumpet); Sammy Price (piano). Love Will Find a Way; After You've Gone; Old Fashioned Love; Squeeze Me; Memphis Blues; and three others. SACKVILLE S2029 $8.98 (from Sackville Recordings, Box 87, Station J, Toronto, Ontario M4J 4X8).

Performance: Shades of Shake

Recording: Very good

The idea of recording jazz dialogues between trumpet and piano goes back to the Twenties, when Louis Armstrong and Earl Hines defined the art. It is a performance concept that suffers from overkill, and you would have to do some digging to come up with a collection of trumpet/piano duets that reflect the past sixty years of jazz development.

While Doc Cheatham's playing bears strong stylistic traces of Armstrong, Sammy Price's piano faithfully follows the blues prescription. That places their collaboration squarely on the traditional side of the fence, yet the sound is timelessly fresh. "Black Beauty," their latest joint effort, is a salute to black American songwriters. Of course, the eleven tunes here only skimp the surface of what is a very deep well, but the program offers an excellent selection of melodies from the early jazz repertoire. If anything, the selections are too familiar. I think it would be wonderful to hear these fine veteran players translate more modern fare—a Lionel Richie tune or a modern jazz piece, perhaps—into their own traditional-jazz language. That might be even more interesting than "Black Beauty," which I recommend nonetheless.

C.A.

RECORDING OF SPECIAL MERIT

CONCORD JAZZ. ALL STARS: At the Northsea Jazz Festival, Volume 2. Warren Vaché (cornet); Al Cohn, Scott Hamilton (tenor saxophone); Dave McKenna (piano); Cal Collins (guitar); Bob Maize (bass); Jake Hanna (drums). Can't We Be Friends?; In a Mellotone; Vignette; Your Red Wagon, and four others. CONCORD JAZZ CJ-205 $8.98.

Performance: Natural

Recording: Excellent remote

This is the second release of recordings made by the Concord Jazz All Stars at the
The second volume of this trek to prove, but the spirit here more than makes up for any slips. The second volume of this trek to prove, but the spirit here more than makes up for any slips. The second volume of this trek to prove, but the spirit here more than makes up for any slips. The second volume of this trek to prove, but the spirit here more than makes up for any slips. The second volume of this trek to prove, but the spirit here more than makes up for any slips.
new only in the sense of its release date. For the last decade or so, McPartland has recorded a series of albums that in singleness of vision, adherence to a self-developed style, and austerity of musical impulse can only be compared to those of the late classical pianist Glenn Gould. If you really want to hear highbrow jazz infected with McPartland's typical humor and intelligence, sample I Hear a Rhapsody on this album. "Personal Choice" is for fans and connoisseurs—which in McPartland's case are probably the same.

JAY McSHANN: The Big Apple Bash. Jay McShann (piano, vocals); Doc Cheatham (trumpet); Dicky Wells (trombone); Herbie Mann (flute, clarinet, tenor saxophone); Gerry Mulligan (soprano and baritone saxophones); other musicians. Jumpin' the Blues; Blue Feeling; Ain't Misbehavin'; I'd Rather Drink Muddy Water; and three others. ATlANTIC 90047-I $8.98, © 90047-4 $8.98.

Performance: Uneven, but ... Recording: Good
Jay McShann's "The Big Apple Bash," a recent addition to Atlantic's Jazzlore series, was recorded in 1978 and originally released the following year (Atlantic SD 8804). It presents the legendary Kansas City bandleader in a variety of lights and settings. By that time, I was ready to push the reject button, but I'm glad I didn't. When the same group—but without Figueroa—performs Georgia on My Mind, things go more smoothly; in fact, Mulligan's sax complements McShann's vocal nicely, and there is wonderful input from guitarist John Scofield. You may remember Scofield for his fusion work with Billy Cobham and George Duke or from his own albums on the Inner City and Arista/Novus labels. Here he slips easily into a more traditional mode and provides some of the highlights, including a wonderful duet with McShann on I'd Rather Drink Muddy Water.

The other group with McShann on this album includes such major forces as Doc Cheatham, Dicky Wells, and Earle Warren, and they deliver the goods with such authority that it is as if a breeze had blown in from Kansas City. Wells is superb, and even Herbie Mann's clarinet (that's right, clarinet) is in an appropriate groove. On Ain't Misbehavin' McShann gets some fine vocal help from Janis Siegel, a member of the Manhattan Transfer group.

MARK MURPHY: The Artistry of Mark Murphy. Mark Murphy (vocals); instrumental accompaniment. The Odd Child; I Remember Clifford, Autumn Nocturne; I Don't Want to Cry Anymore; and four others. MUSE MR. 5286 $9.98.

Performance: Interesting Recording: Good
Mark Murphy opens this new album with a rousing version of George Wallington's hop classic Godchild (here outfitted with Murphy's own lyrics and renamed The Odd Child). Then he proceeds utterly to destroy I Don't Want to Cry Anymore, a rarely heard tune that Mae Barnes used to sing so well. I guess what is really wrong with the latter is Dave Matthew's inappropriate, heavily percussive arrangement; it throws Murphy off the track. It is not often that he loses his way, and the rest of the album is very good. I do think Murphy could have come up with a more original approach to Moody's Mood, but he does a pleasant job of mirroring King Pleasure nevertheless. A medley consisting of two identically titled, vastly different, but eminently compatible songs by James Taylor and Jerome Kern, I Don't Want to Cry Anymore; and four others. MUSE MR. 5286 $9.98.

Record producers like to fire their best shot on the opening track, but if that is what Ilian Mimoroglou thought he was doing here, I'm afraid he misfired. Crazy Legs & Friday Strut, which mixes McShann with Gerry Mulligan, Herbie Mann, Joe Morello (on drums), and Sammy Figueroa (on congas), is a boring, unflattering exercise. The McShann tune touts tediously on, and everybody sounds listless until Figueroa and Morello engage in a pounding banter of sorts. By that time, I was ready to push the reject button, but I'm glad I didn't. When the same group—but without Figueroa—performs Georgia on My Mind, things go more smoothly; in fact, Mulligan's sax complements McShann's vocal nicely, and there is wonderful input from guitarist John Scofield. You may remember Scofield for his fusion work with Billy Cobham and George Duke or from his own albums on the Inner City and Arista/Novus labels. Here he slips easily into a more traditional mode and provides some of the highlights, including a wonderful duet with McShann on I'd Rather Drink Muddy Water.

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If you fancy the music of the Hot Club of France, especially if the music of the late Django Reinhardt plays wonderful games with your emotions, you will want to hear a young Gypsy guitarist named Bireli LaGrene. And then, I am sure, you will want to acquire his total recorded output to date. That’s not a major investment—he has only two albums out—but it’s certainly a major acquisition, for LaGrene plays more guitar on each track than you’ll hear in all of punk and a good deal of rock.

Like Reinhardt, LaGrene plays an amplified acoustic guitar, and what he plays on his two albums (both recorded live) is simply remarkable. Equally astounding is that LaGrene was only twelve years old when he made the first one, “Routes to Django” (Antilles 1002). He was fifteen last year when he recorded the second, “15,” which takes its title from his tender age.

Born on the French-German border, Bireli LaGrene began attracting attention in Europe in 1978, but he has yet to perform in this country. I hope we can soon hear his stunning inventions live in person instead of on disc. His dextrous manipulation of the strings is dazzling, and when you combine that with a fertile, thoroughly musical imagination, as LaGrene does with awesome consistency, you have a feast for any pair of ears. I would also like to hear LaGrene with a less Hot Clubbish rhythm section, but even with a chunk-chunk backbeat, I can only marvel at his artistry.

—Chris Albertson

BIRELI LAGRENE: 15. Bireli LaGrene (guitar); instrumental accompaniment. Douce Ambiance; Schwarz Augen; Valse d’Alsace; Sweet Georgia Brown; Blues for Bireli; Mirage; Aneau; Solidarnosc; Micro; Autumn Leaves; I Can’t Give You Anything but Love. ANTILLES AN 1009 $7.98.

J.V.
Child, arranged here by Ernie Wilkins. Genesis bravely fights the arrangement at first, then resorts to strenuous mannerisms that culminate in a wordless duet with tenor saxophonist Roger Rosenberg. It almost works, but I wish the singer had used his considerable vocal equipment more wisely. Listen to the Silence, the band's theme, is heard in two similar versions, each ending a side, which—along with the inclusion of the Swedish track—indicates that there was not enough material by the New York band to fill an album. When the material is as interesting as most of this is, though, that doesn't matter a bit. C.A.

STANLEY TURRENTINE: Home Again. Stanley Turrentine (tenor saxophone), Irene Cara, Derald Conway (vocals); vocal and instrumental accompaniment. Paradise: You Can't Take My Love. At the Club: Blow; and four others.

Performance: Hackneyed Recording: Good

As every jazz musician knows, paying your dues sometimes has to take second place to paying the rent and eating. So it's artistic dues; there is no new ground broken here. "Procession" is simply solid Weather Report. But considering how much ground Report could have predicted the departures of Pastorious and Erskine—the band goes through bass players and drummers like cigarettes. They've been replaced by Omar Hakim on drums, guitar, and vocals and by Victor Bailey on bass. And Wayne Shorter isn't actually gone; he's just faded so far into the background that he's become all but invisible, something else WR watchers won't be surprised at. But it says a lot about the durability of the world's most popular jazz group—and about the powerful musical vision of its leader, keyboardist Joe Zawinul—that even with three new members (there's also a new percussionist, Jose Rossy) Weather Report still sounds just like Weather Report.

There are a few differences, of course, and they're apparent from the opening moments of Procession. The first thing you notice after Zawinul's droning introduction, which sounds like buzzing flies, is Bailey's bass. It's neither frantic nor prominent. In fact, it isn't even used to anchor the piece; Hakim's drums do that. Hakim doesn't flail about quite as much as Erskine did, but he's still rangy enough to tie down the bottom with bass drum and snare while riding all over the top on cymbals. But when the song eventually kicks into a heavy strut and Bailey and Hakim join Zawinul in an attack on the song's basic riff, it's like old times. And if Procession doesn't settle the issue, Two Lines does; it's classic Weather Report.

As for Shorter, he grows more self-effacing with each album. Most of the time he's consigned to doubling Zawinul's keyboards or tossing in a clipped figure now and then or just keeping silent. His best moments come on Where the Moon Goes, which also features a virtuosic performance by Manhattan Transfer of what has to be the most tortuous vocal chart since Pierrot Lunaire. Shorter's soprano saxophone is simply eloquent here. I expected a lot from Plaza Real, the lone Shorter composition, but it turned out to be the only really unsatisfying thing on the record.

There is no new ground broken here. "Procession" is simply solid Weather Report. But considering how much groundbreaking work the group has done over the years, it's a bit hard to recommend any album. M.P.
superior to the old ones, so the price is indeed right. So far, forty albums have appeared, and I hope the response encourages a continuation of the project. Meanwhile, I have selected four to review here.

John Coltrane appears as a sideman on several OJC albums and as leader or co-leader on three. Of the latter, "Soultrane," is a 1958 Prestige set with the Red Garland Trio. On it Coltrane and Garland display the excellent rapport they developed within the Miles Davis Quintet; in fact, this is virtually a contingent from that group, as bassist Paul Chambers was also a Davis sideman at the time. Coltrane was then fast gaining his own following. Already shaping the musical thinking of many of his fellow musicians, he was reaching a young generation of jazz listeners and pointing the way to the jazz of the future. "Soultrane" is not smooth riding all the way, but when things click—and they do most of the time—the ride is exhilarating. This is Coltrane reaching to where no player had gone before. Very exciting stuff.

Coleman Hawkins also belonged to that select group of individuals who changed the course of jazz. The undisputed "father of the jazz tenor saxophone" had a warm, full-bodied sound that was considered to be slightly outdated by the late Thirties. He set people straight about that with his now-classic 1939 recording of Body and Soul and later threw himself into bop, a kind of playing that was regarded as downright traitorous by the staunch traditionalists, including many of Hawkins's own fans. He smoothed the transition from swing to bop, and "The Hawk Flies High," a 1957 Riverside album, is a good example of the music that resulted. It features a septet composed primarily of bop people, all chosen by Hawkins himself and all eminently compatible with his more deeply rooted style. The album features fine boppish romps and a couple of tracks on which Hawkins exquisitely demonstrates his mastery of the ballad. My favorite is Laura, the set's only standard, which Hawkins translates into a tale of uncommon beauty and grace. I should point out, because the album sleeve does not, that all these tracks were previously reissued as part of a 1973 double album titled "The Hawk Flies" (Milestone M-47015).

Hawkins and Coltrane did not make many appearances together, but they were on hand for Blues for Tomorrow, a track that gave its name to a 1958 release featuring left-over material from five Riverside sessions. There is no piano on Blues for Tomorrow, but the Montgomery Brothers do more than generally a worthwhile set. It is best when full advantage of the musicians present, it is generally a worthwhile set. It is best when...

"The Sound of Sonny." Alto saxophonist Gene Quill and pianist Billy Taylor are part of a quintet that helps guitarist Mundell Lowe pick through Let's Blow Some Blues, which I seem to recall as being a slower take of Blues Before Freud from Lowe's "A Grand Night for Swinging" album. It all ends with The Fuzz, by the Bobby Jaspar Quartet, but the Belgian tenor saxophonist is easily overshadowed on his own date by the work of pianist George Wallington and bassist Red Mitchell. All in all, a memorable bundle of blues.

Finally, there is "George Shearing and the Montgomery Brothers," a 1961 set that originally appeared on Jazzland, a Riverside subsidiary. This reissue contains eleven tracks, and while some of them don't take full advantage of the musicians present, it is generally a worthwhile set.

"The three albums that appear here are..." —Chris Albertson

John Coltrane: Soultrane. John Coltrane (tenor saxophone); Red Garland (piano); Paul Chambers (bass); Art Taylor (drums). Good Bait; I Want to Talk About You; You Say You Care; Theme for Ernie; Russian Lullaby. Prestige/Original Jazz Classics ® OJC-021 $5.98.

Coleman Hawkins: The Hawk Flies High. Coleman Hawkins (tenor saxophone); George Shearing (piano); Oscar Pettiford (bass); Art Travers (drums); Art Monk (drums); Cootie Williams (bass). Bongos aside, the bongo-pounding duo joins in on three selections, burying Wes Montgomery's talent in what sounds like one of Hollywood's José Iturbi sequenc


George Shearing and the Montgomery Brothers. George Shearing (piano); Buddy Montgomery (vibraphone); Wes Montgomery (guitar); Monk Montgomery (bass); other musicians. Love Walked In; Love for Sale; No Hard Feelings; Enchanted; Stranger in Paradise; The Lamp Is Low; Double Deal. And then I Wrote; Darn That Dream; Los. Amado; Mambo in Chernes. Jazzland/Original Jazz Classics ® OJC-040 $5.98.

Perhaps the most prolific jazz labels during the jazz boom of the late Fifties and early Sixties were Riverside and Prestige. Like Blue Note, Atlantic, and most other jazz independents, Riverside and Prestige were owned and operated by record collectors whose shelves bulged with rare 78's and whose enthusiasm for the music manifested itself on their own labels. There was rivalry between these labels—friendly, but rivalry nevertheless—and it was hard to imagine Riverside and Prestige ever coming together under the same roof. That did happen, however, a few years ago when Fantasy acquired first Prestige, then Riverside. Numerous items from both catalogs have since appeared in this country on the Milestone label or repackaged as Prestige "twofers." Now Fantasy has decided to follow suit with a series called Original Jazz Classics.

Lowe pick through...
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THE BRAHMS EDITION

I doubt if there's ever been a composer whose music is practically indispensable for home listening as Brahms. I Brahms wrote it, we've got it. " So said a representative of Deutsche Grammophon speaking of the label's new Brahms Edition of sixty-two LP's. A musical Great Hulk of the Eighties, it does for Brahms in this decade what DG's Beethoven Edition did for that composer in the Seventies. I can't remember now whether the gigantic Beethoven set was issued to commemorate the bicentennial of the composer's birth in 1770 or the sesquicentennial of his death in 1872. But it doesn't matter a whole lot. It was a mammoth undertaking and a milestone in the history of recorded music. This project is another.

Weighing in at something over twenty-five pounds, DG's Brahms Edition, honoring the 150th anniversary of his birth, is spread across eight LP boxes containing recordings both early and late from the company's vast catalog. The latest were recorded digitally only last year and in most cases have not yet been released as single entities. These include the four LP's enclosed in the music-for-chorus-and-orchestra box (2741 019), offering the German Requiem, the Alto Rhapsody, and the rest, all conducted by DG's new Wunderkind, Giuseppe Sinopoli. The box containing the complete (and for "complete" here and below, please read "nearly complete") a capella choral works sung by the North German Radio Chorus, on six LP's (2741 018), is also all new, as is most of the album of motets for vocal ensembles, on five discs (2740 280). This last includes the charming Liebeslieder Waltzes and the equally beguiling quartets for solo voices with piano, beautifully sung by Edith Mathis, Brigitte Fassbaender, Peter Schreier, and Dietrich Fischer-Dieskau.

Of the remaining five boxes, one contains Brahms's major orchestral works, including the four symphonies in the justly praised concertos, not to mention the abundant annotations. Hats off to all concerned!

Under Abbado, the recent digital recording of the Violin Concerto, beautifully played by Anne-Sophie Mutter with Karajan; and a new digital Double Concerto by violinist Gidon Kremer and violinist Mischa Maisky with the Vienna Philharmonic conducted by Leonard Bernstein, all on four LP's (2740 276). The complete chamber music, highlighted by a superb new rendering of the two cello sonatas by Misirislov Rostropovich and Rudolf Serkin, is in a fifteen-disc set (2740 277), and the complete keyboard works, including new digital recordings by pianist Tamás Vásáry, fill a box of eleven discs (2740 278). The collected lieder, sung by Jessye Norman and Fischer-Dieskau accompanied by Daniel Barenboim, are mostly new and occupy ten discs (2740 279).

About two-thirds of all this has been released in cassette form as well. Altogether the Brahms Edition on tape consists of six cassette boxes, four of which hold four double-play cassettes each—that is, each box contains the rough equivalent of eight LP's which accounts for a good deal, but certainly not all, of the keyboard music, the chamber music, the lieder and the music for solo voices (combined in one box), and the choral works with and without orchestra (also combined). This leaves the orchestral works and the concertos, which are divided between two boxes of four regular-length cassettes each.

The best news of all, though, is DG's consumer-oriented price policy. The LP's will be selling for a suggested list of $7.98 each, or $9.98 in the case of the orchestral and concerted works, including the digitally mastered recordings. The grand total for the Brahms Edition complete, therefore, comes to just a little over $300. I won't say "only" $500, but you have to admit that the price is right, considering. And the edited-down set of twenty-four cassettes works out just under $300.

Very few collectors will need to have all of these records (or tapes), but, like the Statue of Liberty, it's nice to know they're there—and that the quality is there too, both in the performances and the recordings, not to mention the abundant annotations. Hats off to all concerned!
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