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challenge.

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HIGH FIDELITY

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EDITOR'S PAGE

by William Tynan



Compact Disc is King

We sometimes get letters criticizing our coverage of the Compact Discsuggesting that we are being swept away on a sea of hype, that the CD has a pocketful of faults, and that we fail to be properly critical of this new format. But stepping back and looking at the explosion in both CD hardware and software, it would seem difficult at this point to believe anything other than that Compact Disc is King.

Take, for example, the number of CD players that are now on the market. Last year, we were able to list all of the available decks in a single article (see "CD Players—How They Compare," October 1984); this year, we simply haven't the space. But we do describe more than 75 models in "Plain & Fancy," which provides an overview of the current crop. In his introduction, Consulting Technical Editor Robert Long explains what each significant feature does and gives a perspective on how useful it really is. Our guide includes a slew of companies whose names are familiar but that are entering a new product category by offering Compact Disc players for the first time. One such manufacturer is DBX, whose DX-3 leads off this month's TEST REPORTS.

Complementing the buying guide is our comprehensive preview of the new classical CDs that record companies are planning to release this season. More than 500 titles are listed this year; in total, more than 4,000 are now available. What's your pleasure: Georg Solti conducting Prokofiev? Fritz Reiner and the Chicago's 1958 *Pictures at an Exhibition*? Marches from the University of Michigan Symphony Band? These and 12 more discs are reviewed this month by Robert E. Benson in "A CD Sampler." And our BACKBEAT section includes CD reviews of the *We Are the World* compilation and McCoy Tyner's *Fly with the Wind*.

As the Compact Disc has advanced the technology of music playback, so has another development spurred the technology of home tape recording. In fact, it is the introduction of the latest generation of VCRs that has made possible a new level of performance in audio recording. In "Tape Format Face-off," E. Brad Meyer reports on a series of rigorous tests he conducted to sort out which of four audio and video recording formats produced the best results. The answer is not unequivocal. (Stay tuned for next month's article on the latest VCR format, Super Beta.) Meanwhile, in "Currents," you'll find a special update by our new technical editor, David Ranada, on the long-anticipated DAT (digital audio tape) standard. You'll also find a story on David himself.

Completing our AUDIO & VIDEO coverage this month is "Car Stereo '86," wherein "Autophile" columnist Jay Taylor focuses on the two hottest areas in mobile music: receiver/tape decks and, yes, CD players.

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MUSICAL

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LETTERS

OVERLOOKED "PIONEER"

I am greatly dismayed that Peter W. Mitchell overlooked one innovative loudspeaker company-Polk Audio-in his "Sonic Marvels" article [June]. It's fine to herald new advances in technology, but give credit where credit is due. The basic technology behind speaker design has remained virtually unchanged for many years. Because of this, Polk has astounded the audio world with its Stereo Dimensional Array line, making a definitive statement with the SDA-1A. In your own test reports, you have deemed the capabilities of the debut SDA-1 "astounding" and "mind-boggling" [January 1983] and have described listening to the stereo imaging of the SDA-2 as "an amazing experience" [June 1984].

It seems that Acoustic Research, Bose, and DBX are making headway in improving traditional twin-monaural speaker design, but the aforementioned article should at least have referred to Polk as a pioneer in audio reproduction.

Chip Bissell

La Jolla, Calif.

Actually, the article overlooked more than one innovative loudspeaker company. Quad comes immediately to mind, but there certainly are others. You have to stop somewhere; what we were trying to do was examine the latest developments, ones we hadn't previously covered in depth. We already had explored Polk's Stereo Dimensional Array technology in considerable detail, particularly in our test report on the SDA-1, more than two years ago. For the latest, see "Polk's Super SDA. The Signature Reference" in our August "Currents."—Ed.

REISSUES: BORN IN THE U.S.A.

Thank you for Wayne King's excellent article, "Not Fade Away" [July], on classic rock albums that have disappeared in recent years. I have found that many r&b classics (particularly on Atlantic) have been reissued in Japan (but not in the U.S.) on high-quality pressings. For example, I recently bought *The Otis Redding Dictionary of Soul* from YSL Records in Northridge, California, which deals exclusively in Japanese imports. Let's hope that the American record companies wake up and start rereleasing these al-

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There's more worth hearing about these great Sansui components. Write: Consumer Service Dept., Sansui Electronics Corp., Lyndhurst, NJ 07071; Carson, CA 90746; Sansui Electric Co., Ltd., Tokyo, Japan.





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

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

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

Just send a dollar (to defray handling and shipping costs) to Memorex CDX II, P.O. Box 4261, Dept. A, Monticello, MN 55365, and we'll send you a new CDX II 90-minute cassette. Limit one per household. Allow 6-8 weeks for delivery (offer expires December 31, 1985). *Comparison of CDX II performance versus Compact Disc containing high-energy electronic music. Data based on independent laboratory tests and examinations.

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

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



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How quick is quick? Less than a half-second. But the reverse story doesn't end there. To eliminate wear and misalignment, AKAI has introduced the diamond-like ceramic head stopper. A beryllium-alloyed diecast two-inch head housing, with double nut locked stainless steel azimuth screws. For added depend-



ability, *all* moving parts are bonded with a tough Teflon[™] casting for permanent lubrication. What does all that mean to you? Simply this: AKAI's total auto reverse design has the distinction and durability, to perform over 200,000 rotations.

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And if all that isn't enough, consider this: the Super GX head is so resistant to wear, it's guaranteed for 17½ years of continuous play.

The case is closed: Closed Loop Double Capstan.



By isolating the tape as it travels over the heads with *two* pairs of

capstans and pinch rollers, tape tension and speed are stabilized, significantly reducing wow and flutter, level fluctuations and modulation noise. Result: unparalleled accuracy and highest of fidelity.

It's evident that AKAI's engineering excellence and technology has altered and influenced industry standards on recording accuracy. Which should automatically be reason enough to reverse your opinion. And, see your AKAI dealer.







auto-reverse in both decks, AM/FM stereo, high speed dubbing capability, detachable speakers, even a 5-band graphic equalizer. In fact, the RT-7085 has so much to offer you'd be crazy to pass it up.



bums in their original form-and on Comnact Disc. too!

Barry Rossen

Engineering Staff, H. H. Scott, Inc. Woburn, Mass.

Contributing Editor John Morthland replies: Actually, nearly all pop and American-roots music from the last three decades is available somewhere these days, so plentiful have reissues become. It's just not often available from major domestic labels, so the whole trick is in knowing where to look

The single best source-in North America, if not the world—is Down Home Music, 10341 San Pablo Ave., El Cerrito, Calif. 94530. Down Home specializes in what store manager John McCord calls "tradition based" music, primarily from America. (Sixties garage bands, however, don't count, he says.) Otis Redding's Dictionary of Soul is available there, as well as 10.000 other titles, most of them reissues.

Down Home is both a mail-order house and a retail store, stocking records from about 500 labels, domestic and foreign. The store publishes catalogs every two years, itemizing its inventory in the categories of Blues and Gospel, Country, Rock 'n' Roll, and British Isles and European Folk. The books are \$3.00 each, which is credited toward the buyer's first order. Though no comprehensive catalog exists yet for Jazz or for African or other non-European ethnic musics, such records are listed in the new-releases newsletter that Down Home mails out free every six weeks. The newsletter is, in effect, a supplement to the catalogs, offering a short description of each album, a few song titles, and some information about personnel. It's not as good as being able to browse through album covers in a store, but it's better than nothing.

Among the record-store chains, Tower has the most impressive selection of reissues, but most major cities have a few specialty shops catering to collectors of any type.

THIS BUD'S FOR ME

Congratulations for finally doing a test report on one of the fine loudspeakers from Bud (Irving M.) Fried [the Beta, June]. It has always perplexed me that mainstream audio magazines such as HIGH FIDELITY perennial-

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ly review less exemplary speakers while ignoring products like Fried's. In fact, I have been waging a one-man crusade to introduce my friends to Fried speakers. (No, I do not work for the company.) For the money (and prices way above), there aren't many speakers like Bud's. Thank you for an honest audio magazine.

Basil O. Gordon

Columbia, Md.

Although a long period did elapse since our last previous review of a Fried loudspeaker (seven years, to be exact), the report on the Beta was not the first, and we're confident it won't be the last.—Ed.

RESTORING ROSSINI

I will not quarrel with Thomas Hathaway's judgments concerning singers, conductors, or period instruments in his review of a new



recording of Rossini's L'Italiana in Algeri [February]: These are matters of personal taste. But his ignorance concerning the new critical edition of the opera is appalling.

Azio Corghi's edition of the full score has been in print since 1981. It is published by the Fondazione Rossini of Pesaro. The piano-vocal score, with a lengthy preface in English translation, was published by Ricordi in 1982. If Mr. Hathaway is to comment on the text of the opera or the edition, he might consult this material.

In disapproving of the use of a valveless 18th-century horn in Lindoro's first-act Cavatina, he comments: "(It seems especially doctrinaire to insist on Rossini's horn when it is generally believed that the Cavatina is a later interpolation by another composer....)" What nonsense. No one has ever supposed such a thing. The piece exists in Rossini's autograph, was performed at the premiere, and offers no textual uncertainty whatsoever. Perhaps Mr. Hathaway is confusing "Languir per una bella" with the second-act Cavatina for Lindoro, "Ah come il cor di giubilo" (which has no horn solo). The latter is not by Rossini, but neither is it a "later interpolation": It is one of the short pieces, in this and other operas, that Rossini sometimes farmed out to collaborators. Haly's "Le femmine d'Italia" is another. These pieces are perfectly authentic, even though they are not by Rossini. They were written and performed under his direction at the premiere of the opera. Questions of this kind should not be the subject of "speculation" when the evidence has been spelled out in print.

Even more disturbing is Mr. Hathaway's cavalier attitude toward the new edition. He reduces its aim to restoring "a few things not often heard before," while claiming that Carlo Maria Giulini and others had already "incorporated into their performances many of the corrections that are only now appearing in printed editions." This is simply false, and it does an enormous injustice to the exhaustive work needed to restore an opera such as L'Italiana to its authentic text. It is particularly false for an opera that was largely rescored in the 1890s, with the addition of trombone parts, the replacement of Rossini's piccolo with a flute, the insertion of extra percussion parts, etc. The scores available before Corghi's edition were corrupt from beginning to end. I urge Mr. Hath-(Continued on page 19)

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This extraordinary new chess set will be crafted to the highest standards of quality and historical authenticity. The National Historical Society has appointed The Franklin Mint to create the sculptures, each of which will be a new and original design. Some figures will be shown standing, some seated, some kneeling, some mounted on horseback. And each figure will be painstakingly crafted of solid pewter, hand-finished, then set atop a solid brass pedestal base embellished with a circular band of richly colored enamel-blue for the soldiers of the North, gray for those of the South.

Every sculpture, moreover, will be so rich with authentic detail that only the artists and master craftsmen of The Franklin Mint, steeped as they are in the tradition of precision coinage, could have achieved it. Indeed, every nuance of facial expression, uniform and weaponry - right down to the buttons, braiding, sabers and carbines-will be depicted with meticulous accuracy.

Thus, The National Historical Society Civil War Chess Set is also a magnificent collection. A triumphant achievement of portrait sculpture-and the ultimate in micro-detailed miniaturization.

ALL FIGURES SHOWN ACTUAL SIZE



Major General William Tecumseh Sherman **BISHOP**



General in Chief Ulysses S. Grant KING





General in Chief Robert E. Lee KING

Major General J.E.B. Stuart KNIGHT

Available only by direct subscription. Issue Price: \$17.50 per sculptured chess piece. Limit: One complete set per subscriber. Please enter your subscription by October 31, 1985.



A dramatic showpiece for your home or office

The chessmen themselves are scaled so that each one will suit the function assigned to it in the game of chess. And the handsomely crafted, pewter-finished playing board has been sized with equal care. Specially fitted, to also serve as the cover for the case which will house all 32 playing pieces, the board completes a presentation so attractive that the chess set will be played and displayed with pride and satisfaction. A Certificate of Authenticity, and specially written reference materials, will also be provided.

Exhibited on a table or cabinet in your living room, family room, den or office, this is a possession certain to evoke both admiration and respect from all who see it. A unique tribute to unique Americans. A work of heirloom quality, that will bring you endless pleasure through the years. And a chess set eminently worthy of being passed on from generation to generation.

The subscription rolls are now open. The work may be obtained *only* by direct subscription, with a limit of one complete set per subscriber. The chessmen will be issued to you at the attractive price of \$17.50 each, with the specially designed playing board and protective case provided at no additional charge. As a subscriber, you will receive two sculptured pieces every other month. You will, however, be billed for only one chessman at a time —a total of just \$17.50 per month. In addition, you will have the option to complete your set earlier, if you wish — but you will be under no obligation to do so.

Here, then, is a work that will bring lasting pleasure to chess enthusiasts, history buffs, collectors of military miniatures—to anyone who appreciates our nation's heritage. Indeed, it is an unmistakably American chess set, that will make a dramatic addition to any room. And an exciting showpiece that will be displayed, enjoyed and treasured by each succeeding generation.

To acquire The National Historical Society Civil War Chess Set, no advance payment is required. But please note that the accompanying Subscription Application is dated and should be returned postmarked by October 31, 1985.

The National Historical Society CIVIL WAR CHESS SET

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Franklin Center, Pennsylvania 19091

Please enter my subscription for The National Historical Society Civil War Chess Set, consisting of 32 chessmen.

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You're looking at what's ahead for the television set. At Proton, we call it "eye-fi".

The Proton 625, above, is a video monitor/ receiver. It's the evolution of American TV. Enjoy its absolutely superior performance just as it is. Or enhance its great sound by making it a component part of your present audio system.

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Proton, clearly the best.

(Continued from page 14)

away to make his own comparison before issuing such uninformed pronouncements.

Giulini is a magnificent conductor, but there is no evidence that he did anything more in 1954 than to use the score he had readily available. A terrible score does not preclude a wonderful performance, no more than a wonderful score precludes a terrible performance. Is it too much to expect a wonderful performance of a wonderful score? Corghi's edition has been in circulation since the early 1970s. Claudio Abbado has conducted it brilliantly at La Scala on several occasions; it has been recorded on Erato, with Marilyn Horne as Isabella; it has been performed at New York's Metropolitan Opera.

Philip Gossett

Professor of Music, University of Chicago Chicago, Ill.

Thomas Hathaway replies: I am grateful to Professor Gossett for his letter. He is right about the Cavatinas: I did misread and confuse the one in the first act with the one in the second (therefore, I'll put aside the question of whether an air Rossini contracted from someone else is as "perfectly authentic" from the audience's point of view as one of his own). He graciously permits my point about the valveless horn, but my blunder in the parenthetical remark following that was inexcusable.

When Professor Gossett goes on to speculate angrily about my attitude toward scholarly editions, I think he does me a small injustice, however. I did not belittle the work of Corghi and others. I only pointed out that comparison of Giulini's version of L'Italiana with the new CBS record did not reveal a transformation in sonority and substance approaching, for example, that in the new performing versions of Mozart's Requiem or between Mussorgsky's and Rimsky-Korsakov's Boris Godunov. Because the CBS album offered a performance less satisfactory than Giulini's, then, it could not be recommended for the sake of the edition or the period instruments alone. But that does not suggest the ideal shouldn't be great performances using correct editions.

Nor can I imagine Giulini ever using a score just as it came readily to hand without modifying at least the most obvious of its accumulated errors—according to his ear, sensitivity, and whatever current scholarship, published or otherwise, he availed himself of (or had urged upon him) in making a recording.

I HEAR YOU

Congratulations to Michael Riggs! His viewpoint and apt convictions on "What You Can (and Can't) Hear" ["Basically Speaking," April] are a beneficial gust of fresh air. One would be tempted to crusade against the Babel at the audio fringe, but this would only result in contamination. Keep up the excellent work.

Carlos E. Bauza San Juan, P.R.

Letters should be addressed to The Editor, Hum FIDELITI, 825 7th Ave., New York, N.Y. 10019. All letters are subject to editing for brevity and elarity.



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CURRENTS

The Ford/JBL Car Stereo System: A Better Idea

As reported in August's "Currents," the Ford Motor Company and JBL have teamed up to develop a complete factoryinstalled audiophile-quality car stereo system. Like the Delco-GM/Bose Music System, which was introduced in 1982, the Ford/JBL Audio System is designed to be car-specific. That is, response is equalized to match the interior acoustics of a particular model. Thus, different cars will have slightly different systems. The Delco-GM/Bose design debuted in the Cadillac Seville and Eldorado, the Buick Riviera, and the Oldsmobile Toronado; the Ford/ JBL system will first be offered in 1986 Lincoln Continentals and will eventually be available in other top-line Ford vehicles.

While the name JBL is familiar to most audiophiles. Ford's involvement in car audio is less well known. The company has been designing car radios for more



Custom-designed Ford/JBL car audio system includes an ETR/tape-deck front end and 12 drivers, clustered front and rear into four three-way speaker systems. The four-channel amplifier/control-computer in the trunk is rated at 35 watts per channel and has a bass level/distortion control circuit. The factory-installed system will appear first in 1986 Lincoln Continentals.

than 50 years and began manufacturing them in 1962, shortly after acquiring Philco, which had been one of its suppliers. Ford currently employs more than 5,000 people in all aspects of car audio, producing more than three million units a year and spending about \$18 million annually on research and development. The Ford/ JBL project began in 1982.

The new Audio System comprises three main elements: a tuner/tape deck, an amplifier and control computer, and a 12-driver speaker array consisting of a set of mid- and high-frequency drivers in either side of the dash, a 51/4-inch woofer in the upper front section of each front door, and a 6-by-9-inch three-driver system in (Continued on page 22)



Spatial-averaging measurement technique developed by Ford's Audio Products Group plots one-third-octave response at driver's position (top). It is used to custom-equalize the system's output to the car's interior acoustics. Graph shows system response of $\pm 3\frac{1}{2}$ dB from 200 Hz to 16 kHz, with the bottom-end hump designed to compensate for the masking effects of engine and road noise. Low-frequency response can be modified with the bass control.

David Ranada Joins HF as Technical Editor

HIGH FIDELITY's well-respected technical staff has added another highly qualified person: David Ranada. He will be working with Senior Editor Michael Riggs on



our audio and video coverage.

David brings a unique combination of music and technology to our staff. A magna cum laude graduate of Harvard whose honors thesis was "Wagner's Tempo Modifications and 19th-Century Conducting," he worked during his college summers on Advent's speaker assembly lines and for the SCHWANN catalog.

Today, David is active in both music and technology, playing violin and piano and owning approximately 400 CDs and more than 7,000 LPs. He is a member of the EIA's Compact Disc standard testrecord committee, the AES's Digital Audio Technical Standards Committee, and the IEEE, SMPTE, and Boston Audio Society. Before joining HIGH FIDELTTY in July, David was technical editor at Stereo Review.

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Technicians at Ford's Vehicle Sound Laboratory in Dearborn, Michigan, install a JBL amplifier/control-computer (inset) in a prototype system.

(Continued from page 20)

each side of the rear deck. The speakers form front and back three-way systems designed to yield uniform stereo at all listening positions.

Using the trunk as an infinite baffle, the rear-deck woofers are said to provide solid bass down to 25 Hz. In what Ford/ JBL calls Selective Frequency Fading, both front and back woofers always remain active at a controlled level, regardless of the position of the front/rear fader, taking advantage of the nondirectionality of low frequencies and our inability to localize them in order to maintain an even sound field.

A JBL amplifier and control computer,

rated at 35 watts per channel into 4 ohms, for a maximum system output of 105 dB SPL (sound pressure level), sits at the left side of the trunk. The Excursion Control Computer is said to limit woofer cone excursion at high playback levels, thereby reducing distortion. Equalization circuitry in the amplifier tailors system response to the specific car model's acoustical environment. The amp's switching power supply allows peak current draw of more than 30 amps, and a differential input and isolated input, output, and chassis grounds are used to reduce alternator and ignition noise.

The front end comprises an ETR with bidirectional seek tuning, scan, switchable DNR, and a volume control with integral loudness compensation. The tape deck incorporates Dolby B, automatic tape-equalization selection, automatic music search, and autoreverse.

Auditions of the Ford/JBL Audio System at Ford's Dearborn research facility and in Lincoln Continentals at the company's test track strongly suggest that this new entry will be a formidable force in the autosound industry, especially for those car buyers who want to skip the hassle of installing an after-market system.

William Tynan

DAT Standard Announced

With the Compact Disc at last firmly under our belts, we now must prepare for the onslaught of another, almost as revolutionary, audio technology. Standards have been announced in Japan for a rotary-head digital audio tape system (RDAT, for short) that will provide two hours of continuous recording on a cassette measuring approximately 27/8 by 21/8 by 13/32 inches (about three-quarters the volume of an ordinary analog audio cassette). Sources within a large Japanese audio company say the earliest models probably will first be shown in the U.S. at the January 1986 Consumer Electronics Show, after being unveiled at the Japan Audio Fair this month. Though no price range has been quoted, one can estimate from the technology involved and the potential market for the machines an initial price of anywhere between \$500 and \$700.

One of the new system's most innovative aspects is its harnessing of rotaryhead VCR technology to strictly audio purposes. With RDAT, the spinning of the record/playback heads (mounted on a 30millimeter-diameter head drum with a 20degree azimuth angle) permits very highdensity data storage, on the order of 114 million bits per square inch of tape surface. Such densities are necessary because the tape speed is very slow (8.15 millimeters, about $\frac{1}{3}$ inch, per second); the tape, very narrow (3.81 millimeters, the same as analog cassette tape); and the amount of data, tremendous. The digital encoding of the audio signal is 16-bit linear PCM (pulse-code modulation), providing a maximum dynamic range of more than 96 dB and very low distortion. The mandatory sampling rate (one of several accommodated by the standard) is 48 kHz, giving a maximum audio bandwidth of almost 24 kHz. Two channels of audio will thus generate more than 1.5 million bits of information every second.

The standard's sampling-rate specifi-

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* 19 of the 20 top-selling pop and classical Compact Discs listed in *Biliboard's* August 3, 1985, issue were mastered on Sony Digital equipment.



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cations have some interesting consequences. The 48-kHz rate is termed mandatory because every RDAT machine will be capable of playing back and recording two-channel tapes using that conversion speed. But some RDAT machines will have other, optional sampling rates available. For discrete four-channel recording, the standard recommends a rate of 32 kHz (which means that the maximum recordable frequency will be just under 16 kHz). Those willing to make such a sacrifice in bandwidth for two-channel recording will be able to double the playing time of a tape to four hours. And for two-channel playback, most RDAT machines will offer a sampling rate of 44.1 kHz, the same one used in the CD system. They will not be able to record at 44.1 kHz, however,

This arrangement will make it very hard, if not impossible, to make a digitalto-digital copy of a CD, because the sampling rates of CD players and RDAT decks (in recording mode) will not match-a primary requirement for direct digital dubbing. To transfer a CD onto an RDAT cassette, you will have to first convert it into an ordinary analog signal. The dubbing process will therefore add 3 dB of noise to the copy. This is not a serious limitation, however, since very little music approaches 93 dB of dynamic range, let alone the 96

dB of which the Compact Disc theoretically is capable.

Why, then, does the standard include 44.1 kHz at all? So that record companies will be able to sell prerecorded RDAT cassettes made directly from their CD-format master tapes. Such consideration by hardware designers for their software brethren is rare in the music industry and can only be encouraged. Let's also hope that the technology for fast, accurate mass duplication of RDAT tapes can be made available fairly inexpensively. In roughenvironment applications where CD still has problems (portable and car units), the isolation from physical shock enjoyed by an RDAT tape wrapped around its head drum may prove to be the answer.

Believe it or not, yet another DAT format is still in the works: SDAT (stationaryhead digital audio tape). It was widely anticipated that the EIAJ (Electronics Industry Association of Japan), under intense pressure from industry lobbyists, would simultaneously issue two digital audio tape standards, one for RDAT and one for SDAT. But this round of the battle of the giants (Sony wanted RDAT, Matsushita and JVC wanted SDAT) apparently has gone to Sony, since, as of this writing, no SDAT standard has been agreed upon.

David Ranada

New Tape Accessories

Tape-care kits are fairly common. Something along these lines seems to be offered by every tape company (and some nontape ones). New accessories come from concerns as diverse as Kodak (among the world's most familiar brand names), Audio-Technica (a specialist that is well known in our field, little known outside it), and SSK (a large Korean corporation that is all but unknown to Americans). But TDK is the first major manufacturer we know of to offer such a product for 8mm video: the ECL-20 head cleaner. And Nortronics has added the VCR-350 speed rewinder (\$60) to its tape-care line.

Two welcome novelties come from 3M. Scotch Re-Label Adhesive Tape is white, with a write-on surface, and strips off the videocassette or its box when the time comes to rerecord the cassette and change the label. It's three-quarters of an inch wide and comes in a dispenser designed to deliver lengths appropriate for both the box and the cassette spine, for VHS and Beta formats. Then there's the "time-left gauge"-a pressure-sensitive label that you can affix to the supply side of a videocassette to calibrate it. The company has received a patent on the idea and includes the label with its EXG and EG cassettes.

Finally, on behalf of recordists who stalk live game-well, music-we're pleased to see that Koss is sticking to its tradition of offering headphones that allow minimum intrusion of ambient sound and therefore can be used for monitoring, which most current models can't. The revamped Home Pro Plus line includes the Pro-4X Plus (\$100), the Pro-4AAA Plus (\$85), the K-4OLC Plus (\$45), and the K-6X Plus (\$35). The model designations may sound familiar, but the company says the "Plus" signifies both cosmetic and sonic upgrading.

Robert Long



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Merritt Island: Southern Audio - Tallahas-see; Stereo Store - Daytona Beach, Holly Hill: Stereotypes - Miami: Sympathetic Ear-Gainesville: tech Electronics

III. Greensboro, Raleigh, Winsto Salem SOUTH CABOLINA Anderson: Joh

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Kingsu.... Memphis: Opus II VIRGINIA Roanoke: Audiofronics - Viry... Maial Sound - Leesburg: Evergree Stereo - Rich-

Charlottesville: S ed Marhine

NEW MEXICO Carlsbad: Beason's - Santa Fe: Candy Man High Fidelity Shop

OREGON Eugene: Bradtords High Fidelity Pendleton: Royal Mobile Sound - Klamath Falls: Sound Chamber - Beaverton, Port-UTAH Salt Lake City: Broadway Music + Vernal: Dirk Labrum Co. + Logan store only.

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The Speaker Specialists

CROSSTALK

CD OVERSOLD?

I just bought a Technics SL-P7 Compact Disc player, which functions properly and sounds good. But I can't hear much (if any) improvement over my LP system. I expected a large improvement, and now I feel I've wasted my money. I think CD players have been oversold. They may improve the sound of a poor system, but I can't tell any difference on mine (a Carver C-4000 control console and amp, JBL L-200B speakers in the front and Bose 901 Series IVs at the back, and a Pioneer PL-L800 linear-tracking turntable).

Richard L. Hoge Skiatook, Okla.

I'd expect a number of advantages of the Compact Disc to be immediately apparent to someone with your sort of system. You'll never hear any wow (or "sourness" or "tinniness") due to eccentrically pressed records, which I encounter all the time. (You can get around this problem with a Nakamichi Dragon-CT turntable, but it will set you back \$1.740.) There's no appreciable sonic deterioration within the first 10 or 20-or 100playings of a CD due to wear or scratches or dirt that has been ground into the surface by a diamond stylus. The pops and ticks that are present in many LPs even on first playing are absent from CDs. And all the fussy adjustment and care considerations that surround the LP and its pickup cartridge are banished with CDs.

You may also hear greater clarity or depth or a crisper stereo image, but not necessarily. If these were the properties you were looking for, I can understand how you might be disappointed, depending on the specific records you chose in arriving at your judgment. But since I'm currently reveling in Wagner's Ring as newly rereleased on CD by London some 20 years after it was recorded and have never encountered any LP version (including the same Georg Solti performance) that is as thoroughly satisfactory on all sonic and practical counts, I can't at all agree with your conclusion.

WHY NOT DBX, TOO?

Why do some high-end recorders have only Dolby B and C noise reduction, while others, some costing much less, have DBX as well? There is no doubt that DBX makes possible a much better signal-tonoise ratio. The S/N spec for my Technics RS-B50 with DBX is 92 dB, and after being spoiled by the ultrasilent background of the Compact Disc, I'm pleasantly surprised that I can get this kind of performance from a cassette deck. On some classical music, I have noticed a certain amount of the hiss-pumping associated with DBX in quiet passages of dubs from CD, but I believe this is a minor by Robert Long

> price to pay. However, the decks you test measure only about 80 dB in DBX S/N ratio. Is the Technics actually capable of 92 dB, or does Technics measure differently?

Thomas R. Wiles West Fork, Ark.

We measure noise below 200 nanowebers per meter-DIN 0 dB, and the reference level of the current EIA/IHF measurement standards. Many deck manufacturers use a higher reference of one sort or another (the midrange tape-saturation point, for example), which inflates their S/N figures with respect to ours. If you choose your levels carefully and use 70microsecond equalization (meaning Type 2 or 4 tapechrome/ferricobalt or metal, respectively), you should never hear pumping-or noise of any sort-with the vast majority of source signals at any playback level that I would call reasonable for the home. But setting levels with DBX is relatively tricky because of its large compression ratio. We get many puzzled letters about the metering recommendations that appear in owner's manuals and in our reports on DBX decks. This may be one reason some deck manufacturers avoid it or incorporate it into only a few models. Another is the much



broader consumer acceptance of the Dolby name.

PICKUP IN A POKE?

I have a question about your reviews of phono cartridges as compared to those of the same or similar cartridges in other magazines. In particular, stereo imaging and separation seem to vary from report to report. Could it be that cartridge behavior is system-dependent and that better performance than you report can be achieved?

Jim Malone

Fayetteville, N.Y.

Yes, it is. One reason is variation between samples, which can be significant in phono cartridges. Another is differences in methodology. If you've been reading our test reports for a few years, you may remember how different the separation and frequency-response curves were when we changed from the CBS to the JVC test records for these measurements. So a lot depends on the records themselves, as we've often commented in our cartridge reviews. A third important factor is setup. Small changes in alignment can sometimes have disproportionate effects, especially with regard to channel separation. The chances that two people (or even one person on two occasions) will set up a cartridge exactly the same are slim, at best.

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

MAXELL TAKES COMPACT DISC QUALITY OUT OF THE LIVING ROOM.

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

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

As a result, AC bias noise is greatly reduced. And maximum output levels are significantly increased. In fact,

the dynamic range of XL-S is expanded so much, it can capture everything from the subtle passages to the extreme bursts inherent to compact discs.

So record your compact discs on Maxell XL-S.

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NEW SIZE, NEW LOOK The 22 square tube. The very

latest in picture tube technology. Twenty-eight percent more picture than 19" sets; full function remote: famous 10 2 1 limited warranty. A complete nerve center that integrates both video and audio sources. Only from Hitachi.

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Another Hitachi breakthrough. The new Cam-N-Cord. color camera and VHS recorder all in one mini hand-held unit. The ultimate in portable video electronics. 160 minute record play time, 300 line resolution. 7 LUX, records direct from A V output on TV, no tuner needed. Another Hitachi first.



BASICALLY SPEAKING

Theory vs. Practice

Everyone has heard the old story about aerodynamic theory predicting that bumblebees can't fly. I don't know whether it's really true, but regardless, the point is well taken. All the fancy talk in the world won't make the plain facts disappear. It can, however, create enough of a distraction for them to slip by unnoticed now and again.

This came home to me most recently at the Summer Consumer Electronics Show, where I was treated to an indepth explanation of the rationale for a new type of interconnect cable. known generically as LC-OFC (i.e., linear-crystal, oxygen-free copper). "Oxygen free" simply means that the copper is very pure, containing almost no copper oxide (rust, if you will). Such wire is now commonplace in audiophile cables. "Linear crystal," on the other hand, is something new. The wire is composed of a relatively small number of large copper crystals instead of a large number of small ones. This, in turn, reduces the number of points at which a signal must cross a junction between two crystals.

Proponents of the new wire claim that each of these junctions acts as a tiny diode and therefore distorts any signal passing through it. Hence, large crystals assure purer sound. This is not as preposterous as it sounds, since passive components, such as resistors and capacitors, have been shown to generate tiny amounts of distortion. The quantities involved truly are minuscule, however, so I asked how much difference in distortion the makers of this new cable had found between it and ordinary wire. The answer was that they had never actually measured it: They had just calculated what they thought it should be.

Does the stuff really sound better? Frankly, I doubt that it does, but I don't know. I have a sample pair for auditioning, however (the subject of a future column). Meanwhile, remember: A good story may be just that, and nothing more.

The reason I've gone on at such length on the subject of these cables, only to put off the conclusion to another day, is that it's such a good introduction to a couple of amplifier-related topics I want to cover: Class A vs. Class AB and discrete components vs. integrated circuits.

Class A is much in vogue these days, partly because it has some technical advantages over other operating modes and partly, I suspect, because "Class A" sounds so much like "Grade A"-the best. And in a sense, it is. All else being equal, a Class A circuit should produce less distortion (particularly at low signal levels) than a Class B or AB circuit. Nonetheless, the latter (AB especially) are far more common because they're much more efficient. A highpower, pure Class A amp makes a very nice space heatby Michael Riggs



er. The reason is that enough bias current is used to keep the transistors dissipating the equivalent of full output all the time; as a result, they generate as much heat without an audio signal as they do with one. But this arrangement also prevents them from ever completely switching off, thereby avoiding an effect known as crossover distortion.

In a pure Class B circuit, the transistors switch all the way off whenever they are not passing a signal, which greatly reduces their average power dissipation. This increases amplifier efficiency to a theoretical maximum of 78.5 percent (as opposed to 50 percent for Class A), though at the expense of higher distortion. Class AB is a hybrid that uses enough bias to keep the transistors running Class A at low signal levels. At high levels, the transistors are allowed to switch on and off, but since the absolute amount of crossover distortion does not vary with signal level in Class B operation, the percentage of distortion is much lower than it would be if a weak signal were switching the transistors. But theoretically, it still is higher than it would be for a similar Class A design.

All that said, we come to the question of how much difference there really is, and the answer turns out to be "not much." In our testing, we have not found the distortion figures for Class A amplifiers to be consistently lower than those for ordinary old Class AB jobs, regardless of signal level. Many other aspects of a design affect its performance, to the extent that they can overwhelm differences attributable to the class of operation. Given this fact, it is not surprising that we have encountered no sonic qualities peculiar to any one mode of amplifier operation: A Class AB amp can be just as good as a Class A model.

The other question is that of discrete parts—transistors, resistors, and capacitors—vs. integrated circuits, which incorporate large numbers of such components on a single, tiny silicon "chip." The argument is sometimes made that packing an entire circuit onto a sliver of crystal entails compromises that ultimately degrade the sound reproduced through it.

The performance of some of the first ICs to be used in audio equipment (the 741 operational amplifier, for example, or its cousin the 301) was perhaps marginal relative to what could be achieved with discrete circuits, but they worked and were cheap (about 25 cents each). Much better ICs are available today, making possible circuits of a complexity that would be impossible without them. And if you look at the noise and distortion figures for equipment using ICs compared with those for similar models built around discrete components, you'll see that neither category has a consistent advantage over the other. Not surprisingly, then, we have observed no characteristic sonic differences between these two types of gear, either.

77 COMPACT DISC PLAYERS COMPARED

A basic guide to which models have the features you really want and need by Robert Long

few years ago, while talking to a friend who is in many ways what I think of as a "typical" HIGH FIDELITY reader. I was shocked to discover that he was looking forward to the then-unborn age of the digital disc not because of the presumable sonic perfection of the medium, but because of the hassles and doubt he would be saved. No more worry about tracking force, vertical tracking angle, lateral tracking angle, antiskating, or tip wear. No more scratched records from hand cueing, and no more mechanically miscued starts. No more jumping up to keep the stylus from gliding into a cut you don't want to hear immediately after one you do.

These are legitimate concerns. The pleasure we can take in listening to music is, by and large, greatly enhanced by Compact Discs, and convenience features are as much a part of that enhancement as are the engineering developments underlying the medium's sonic benefits. In fact, the engineering and the convenience are inextricably intertwined, because the digital "addresses" that are the key to many of the operating features are built into the recorded bit-stream. Soon there even will be CDs that carry text or

images to accompany the music, for display on a TV screen—opera librettos, for example.

But what you can buy already is very impressive compared with the creature comforts afforded by typical analog gear. Indeed, you may find yourself confronted with more options than you actually want or need. For example, the "Denon Audio Technical CD" (38C39-7147) has 99 tracks, but few music CDs have more than ten or so. So how many selections should vou be able to program? Although one might want to set up a score of the Denon disc's test tracks to play in succession, few music listeners will ever want to program more than 12, even allowing for repetition of a favorite track be-

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tween assorted others.

As you read on, think about your tastes and needs. After all, one man's thrill is another's frill, and it's not our intention to tell you what you should buy—just what's on the market.

Programmability isn't exactly unique to CD players, but the precision with which they can follow elaborate instructions far outstrips that of any comparable features in cassette decks or the few programmable turntables that have been marketed. When you program a track, its first note will emerge complete from a background of utter silence, which is seldom the case with the other two media. Most CD players will let you step the display to the track number, enter it, step to the next track number, and so on-for a specified number of times, which may include re-(Continued on page 35)



BEYOND CONVENTIONAL CD PERFORMANCE

Onkyo's Integra DX-200 Compact Disc Player sets a new standard of CD performance, both in sonic fidelity and user convenience.

When comparing CD players, the digital-to-analog (D/A) conversion method is the key factor, for although the sound on the disc itself is digital, the CD player must convert it to analog for output to the amplifier. If this is not accomplished perfectly, the chief benefit of digital—far greater dynamic range with a total absence of noise—will not be realized. That's why Onkyo utilizes a 16 bit D/A converter system that exactly matches the 16 bit digital code used in the recording process, along with specialized double oversampling and digital filtering techniques. Four separate power supplies eliminate interaction betweer stages, and exclusive Delta Power and Super Servc circuitries maintain noise & distortion free reproduction. A precision 3-beam laser pickup assures precise tracking with fast track access.

A full complement of convenience features includes 16 track random memory, with complete digital display for track, index, elapsed/remaining time, and memory contents all of which can be controlled by the DX-200's wireless remote unit.

The Integra DX-200 goes beyond conventional CD performance to let you realize the promise of digital as it was meant to be heard. Discove- the cudible difference today.

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A unique flat-wire voice coil (Patent applied for) helps JBL Automotive Loudspeakers achieve both high efficiency and high power capacity.



Each speaker features a die-cast aluminum frame to ensure complete freedom from warping or corrosion.



The loudspeaker's magnetic structure produces a symmetrical magnetic field around the voice coil gap of the low frequency driver. This design provides a dramatic reduction in distortion.

You're looking at the inner workings of a remarkable automotive product. It's manufactured to tolerances so precise that they actually rival those found in critical engine components. It incorporates some of today's most advanced metalworking and chemical engineering techniques. And its performance is unsurpassed.

The product is JBL's T545, 3-way automotive loudspeaker. Part of a full line of new JBL speakers designed with innovative features you can see as well as hear. Each model, for example, utilizes a rugged die-cast aluminum frame to ensure tight tolerances and complete freedom from warping and corrosion. The loudspeakers also feature large, long-excursion, flat-wire voice coils. This design uses the magnetic field in the voice coil gap more efficiently so the speakers need less power to operate.

And that's only part of the story. Through the use of large-diameter, hightemperature voice coil formers and the latest in high-temperature adhesive technology, power capacity has also been improved. Combined with the loudspeakers' high efficiency, this provides outstanding dynamic range and significantly higher maximum sound output.

Other features include a massive, barium ferrite magnetic structure, powerful high frequency and ultra-high frequency drivers, and biamplification capability on 6 x 9-inch models.

Of course, the best way to appreciate their advanced engineering is to audition them for yourself. So ask the audio specialists at your JBL dealer for a complete demonstration of JBL Automotive Loud-

speakers. Once you hear them, the argument for



buying anything else will simply fall apart.



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Thé Teac PD-300 **Compact Disc Player** won't add anything to your music. No hiss. No pops. No wow. No flutter. Which means nothing comes through but the music, pure and clear. Random memory programming lets you choose the selections you want to hear in the order you want to hear them. You can repeat, edit, search, and seek with the touch of a finger.

When music is your passion, listen to Teac made purely for music.

HiFi in the extreme.



(Continued from page 30) peats of some tracks, as you choose. This means that you can customize the sequencing of the musical material to your taste. And the new sequence will play back almost as seamlessly as the one provided by the disc's producer, whereas comparable random access in a tape deck requires shuttling time as the transport winds from the end of one programmed selection to the beginning of the next.

The stepping process can also be used to cue to the beginning of a particular track. Some decks have a keypad that enables you to enter track numbers directly, for cueing or programming. Such decks may also accept timings or index numbers. (Confusingly, the latter are sometimes called "subcodes," though indexing uses only a portion of the subcode information that will also be able to supply text or images.) Don't expect randomaccess memory programming by time or index (though a few models do provide it): The results would mostly sound pretty choppy compared with a series of full tracks.

A repeat function can be used to provide background music for parties, but it's also effective for studying one piece of music closely—particularly if you buy a model that will let you place the start and end points of your repeat wherever you want. In that way, you can block off even very short segments of music for microscopic study. Another possible use for a repeat option is to help create a mood: All the models I've worked with that offer both it and programmability will repeat the program—selected for the desired mood—as well as the entire disc, a selected track, or a continuous segment of the disc. The choice is yours.

A couple of features are available that can help you decide what to listen to or program. The first is what we call "scan"; manufacturers sometimes call it "intro scan" or "intro skip." It proceeds from track to track, playing the opening seconds of each. Audible cueing, which also goes by a variety of names, gives you much smaller music samples as the pickup moves across the disc (in either direction), but does so more continuously than "scan," so that you can hear more or less what the music sounds like in all parts of each track. (The pitch does not change, as it would with a sped-up LP; the music just gets choppy.) Often the progress across the disc is in two stages: At first it is only about twice the speed of normal playback, leaving the music quite recognizable, but if you hold the key down long enough, the rate of traversal increases. The effect is rather like groove-skipping on a record, except that there's no rasping of the stylus across the disc and no possible damage from the process, and the output level is reduced automatically while the search is in progress.

A CD player's display also can help you find what you want, although many have more alternatives than I'm really interested in. The timeremaining option included in many models, which at first struck me as particularly useless, is a sign of our harried times (no pun), I suppose. I often want to start in on music that, it occurs to me, I may not have time to play all the way through before something or other happens. With a whole hour available at a clip on some CDs, this is a more immediate question with this medium than with its popular predecessors. A time-remaining counter saves you the bother of looking up the timings on the jacket and doing the math.

More important, in my estimation, is the inclusion of index numbers, even on players that can't cue or program by them. The index feature of CDs is in serious danger of atrophy. Polygram omitted them from all of its early output, no matter how urgently the music called for them. As a result, relatively few players bother with them-giving further impetus to record producers to ignore them, making player manufacturers less likely to provide for them and so on. Yet on the few discs I have where they're used as Polygram originally said they should be-to index the movements of short works that each constitute a track on a multiwork disc, for examplethey're very useful.

If you're devoted to the "stethoscopic" ability of headphones to reach into the music and differentiate sonic elements that are blurred by loudspeakers and room acoustics, you'll probably be among those who prefer to get their signals direct from the CD player, instead of secondhand via the preamp or receiver. To accommodate this approach, there must be a way of controlling the output level to the headphone jack; in some models, it may also control the line output (or one of the line outputs), but make sure you can turn down the phones when you want to before you buy.

Finally, there's what may be the greatest creature comfort of all: remote control. Most remotes for all sorts of products are wireless these days; almost all use infrared light beams as the transmission medium. They come in two basic types. Probably the easiest to shop for is the kind that is player-specific and controls only the player. If you go instead for the kind that works with an entire audio system, in which the CD player is only one element, you probably will be unable to mix different brands in the system-or, at least, to control those components that come from companies other than the device's manufacturer. On the other hand, if you do want remote control of more than one element in the system, going with a separate remote for each can create an annoying clutter. How you should respond to this dilemma is something you'll have to decide for vourself. One bright spot on the horizon is GE's new Control Central, which can set itself up to mimic as many as four other infrared remotes of your choice. So for about \$150, you can have it both ways.

This chart lists only those models introduced since our last guide to CD players, which appeared in the October 1984 issue. Some of the units listed there are still on the market, so you should consult both articles for a complete overview of currently available players. The information shown here was supplied by the manufacturers, and though we have tried very hard to weed out errors, we cannot guarantee absolute accuracy. (The company representatives we talked to were sometimes uncertain of or confused about the capabilities of their own products.) We are particularly suspicious of the large number of players that are alleged to be programmable by index number—a very rare feature, in our experience. So use this chart as a starting point, but remember that it always pays to try before you buy.

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MCD Professional MCD	H H			T T	T	15 15	AP AP	P P		\$1400 \$699	

A = all (repeats entire disc)

B = battery-powered portable C = car stereo model

- D = elapsed time into disc
- E = elapsed time into track

H = home deck

I = index

L = plays Laserdiscs and CDs

- M = time (minutes and seconds)
- $\mathsf{P}=\mathsf{programmed} \; \mathsf{sequence}$

R = remaining time

S = segment (repeats between user-selected points)

T = track (band)

 $\mathbf{Z} = \mathbf{midsize} \; \mathbf{deck}$

What do Beethoven's Ninth, the destruction of the Death Star, Mozart's laugh and rock video's latest thriller have in common?

exceptional demands on your audio system. Because from the crescendo of a massed chorale to the detonation of proton torpedos, the sounds of modern entertainment reward audio high-performance as never before. And nothing performs like Yamaha.

Yamaha's sophisticated new R-9 receiver is designed to make the most of today's home entertainment possibilities. With seven audio and three video hookups, the R-9 can serve as the control panel for vour entire home audio/video system. And because it has a separates-quality 125-wattper-channel* amplifier with Auto Class A Power amplification, it provides the high power and wide dynamic range that add a whole new dimension to your home entertainment experience.

Now you can hear digital recordings and compact discs reproduced with the full clarity and resonance demanded by serious audiophiles. Experience the high-decibel impact of the sound effects that make your

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The R-9's AM/FM stereo tuner features digital tuning with a unique 5-digit capability that allows you to fine-tune in increments of 0.01 MHz (FM).

This is particularly helpful in obtaining maximum signal quality when tuning relatively weak stations interfered with by stronger adjacent stations.

Combined with our new Computer Servo Lock Tuning System, it gives you the best of both digital and analog tuning capabilities.

The R-9 includes a multi-function infrared remote control. And it is just one in a complete line of advanced Yamaha receivers. Now that's entertainment.

*125 watts RMS per channel, both channels driven into 8 ohms, from 20 to 20,000 Hz, at no more than 0.015% Total Harmonic Distortion. Yamaha Electronics Corporation, USA, P.O. Box 6660, Buena Park, CA 90622.

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CHART COMPILED BY SANDRA C FOSTER AND ANDREA K. DTAÑEZ

TAPE FORMAT HOLDER BY E. BRAD MEYER

Forget about video. How does a Hi-Fi VCR stack up against other tape systems including digital—for serious audio recording?

erious recordists (by which I mean those who tape live music) are always searching for better machinery. So when the first Hi-Fi VCRs introduced FM (frequency modulation) recording—a method previously used only in expensive laboratory instrumentation recorders-to the consumer market a little more than a year ago, the specifications of the new system naturally made us wonder what it had to offer as an audio-only medium. This report, the result of many hours of listening and lab testing, will provide some answers by comparing four machines: a high-quality audio cassette deck with metal tape and Dolby C noise reduction, a semipro half-track open-reel recorder running at 15 ips (inches per second) with DBX Type II outboard noise reduction, a VCR with an outboard PCM digital adapter, and a Hi-Fi VCR. Although Beta

and VHS Hi-Fi differ in how they lay down the FM audio tracks on the tape, the two systems are almost equivalent functionally (see "How Beta Hi-Fi Works," August 1983, and "How VHS Hi-Fi Works," June 1984), and I used a Beta Hi-Fi deck as an example of the genre.

Because the most important consideration for a serious recordist in selecting a tape system is how it sounds, I'll describe the sounds of all four machines on different types of music and document their performance with frequencyresponse plots and with graphs of overload, noise, and distortion. Questions of reliability, flexibility, ease of use, and cost are tackled in the boxes accompanying the main text.

E. Brad Meyer, an avid recordist, writes frequently on audio and video topics.



Is this any way to listen to your stereo?

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The reason why is that the average speaker depends on a conventional cone driver. Now cones may be great for ice cream, but they

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Kenolidimary amensions 61/4" x61/4" x 1". duction throughout the frequency range. And it's about as close to the real Bach or B.B. as you can get. These speakers look as good as they sound. Because

the flat-wave drivers are slimmer and relatively light,

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

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PERFORMANCE

The "signal space" available with each system is shown in Figs. 1 through 4. It is the area between the overload limit at the top of the chart and the noise floor at the bottom, both displayed as a function of frequency. The middle line is a one-third-octave plot of a 1-kHz test tone. On the cassette and open-reel tapes, this signal is at cassette Dolby level (200 nanowebers per meter). For the PCM processor, I chose a level 10 dB below where the "overload" light goes on at 1 kHz; for the Hi-Fi video recorder, I used the level at which its 0-dB LED comes on.

Ideally, the tone would appear as a single spike rising out of the system's background noise. In reality, however, tape recorders add distortion and noise, which appear as elevated response at frequencies other than that of the test tone. The area between the noise floor (the lower boundary of the white region) and the plot of the test tone is the amount of noise and distortion the sys-



RELIABILITY

Reliability doesn't just mean how long a machine will operate before it breaks down. Remember, we're talking about serious recording here: The system must function without audible errors for an entire session, as retakes can be terribly expensive. And in concert recording, there *are* no retakes, making the requirement even more stringent.

Ordinary analog recorders (such as the cassette and open-reel machines) rarely fail outright, but if not properly maintained, they get dirty and go out of adjustment, degrading frequency response. Poor tape or dirty heads can cause dropouts (temporary loss of signal or reductions in recorded level). The two video-based systems, on the other hand, usually function perfectly unless something goes very wrong, and then the sound mutes for anywhere from a tenth of a second to several minutes. However, such calamities are a sign of poorly designed equipment or major tape defects; good Hi-Fi video and PCM systems work for hundreds of hours without audible problems. (For digital sessions, the pros use two recorders, just to be sure.)

tem generates in the presence of the signal.

In addition to the spectrum of the noise floor, I have indicated the system's overall noise level with no input as measured with an Aweighting filter, which rolls off frequencies below 1 kHz to approximate the ear's sensitivity at low levels. This is marked with an A at the left side of each graph. At frequencies up to 4 kHz, the upper boundary of the white area represents the level at which the system generates 3 percent distortion. Above that frequency, I plotted the onset of nonlinearity: the level at which the output of the system fails by 1/2 dB to track increases in the input.

The audio cassette deck's performance is depicted in Fig. 1 (left). To show this format to best advantage, I used metal tape and Dolby C noise reduction. The recorder is also equipped with Dolby HX Pro, which extends its highfrequency overload limits; other machines (and other kinds of tape) will have lower ceilings.

The test tone raises the output level over a wide frequency range. There are three reasons. First, the action of the Dolby circuit allows the background noise to rise with the signal. Like all companding noise-reduction systems, Dolby works by relying on the music's ability to mask the noise that is moving up and down with it. (See "Basically Speaking," August.) As the graph shows, Dolby C acts from about 100 Hz up, with its effect decreasing again at the very top of the audible range.

Increased output also occurs because tape produces modulation noise at frequencies near the test tone, visible as a gradual rise between 250 and 800 Hz and between 1.25 and 5 kHz. Thirdly, we see distortion components at 2 and 3 kHz, the second and third harmonic multiples of the test tone. Their combined level is 45 dB below the tone itself, representing a total harmonic distortion (THD) of 0.55 percent. The system's dynamic range is the distance from the 3 percent distortion point at 333 Hz to the Aweighted noise floor—in this case, a very good 75 dB.

This cassette deck makes very good duplicates of most prerecorded material and even does a creditable job on wide-range orchestral Compact Discs. Figure 5 (page 46) shows that its frequency response (taken with the Dolby C on) is quite flat, though with this particular brand of metal tape the noise reduction caused some alteration in response with changing level no matter how the machine was set up. The flutter of all audio cassette decks varies with the quality of the cassette, but on this machine with good tapes it is not obtrusive even on sustained piano chords.

Figure 2 (below) is for the half-track open-reel deck with DBX Type II noise reduction. Its signal space is much larger than that of the cassette system, with about 8 dB more headroom, 4 to 7 dB less modulation noise, and more than 10 dB less harmon-





Most video systems treat you as if you were deaf.

by Ray Charles

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

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

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

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

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

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

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

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



W PIONEER* Video for those who really care about audio.



ic distortion (THD is 0.13 percent). The DBX pulls the noise floor way down when no signal is present, giving a phenomenal overall dynamic range of 115 dB. Frequency response (Fig. 5) is wider and flatter than the cassette deck's and does not change with level.

As the signal falls from 0 dB, the noise goes down with it; the music masks the noise very well, with scarcely any audible side effects even on the widest-range material. On a live recording of Verdi's Requiem, which has fortissimo orchestral, choral, and bass-drum passages followed by dead-silent pauses, this setup has less noise in the quiet passages than any of the others, including the digital adapter. Its flutter at 15 ips is too low to hear on orchestral or vocal music, but just audible on piano.

Figure 3 (below) shows why recordists convert to digital. This consumer PCM adapter, nominally a 14-bit machine, also has a 16-bit mode, which I use for all my own recording and tested for



COST

For home use, Hi-Fi VCRs offer a lot of sound quality (or your dollar. VHS machines still carry list prices of nearly \$1,000, but Beta models can be bought for less than \$500—lower than the price of many audio cassette decks that don't provide the extra video function. (It is rumored that some people actually use these things to record television programs, though I'm not sure why.)

A PCM adapter can be used with a budget VCR, but for reliability, I recommend an industrial-grade deck. Such a recorder, together with one of the latest PCM processors, costs about \$1,400. A high-speed open-reel machine with outboard noise reduction will cost you \$1,500 to \$2,500.

Tape cost for metal audio cassettes is about \$5 per hour, compared to \$20 per hour for half-track open-reel tape at 15 ips. The latest PCM processors—and all Hi-Fi video decks—work at the slowest consumer tape speeds (Beta III and EP), giving an hourly tape cost of only \$1.50. But PCM tapes recorded at the fastest speed play more reliably on other VCRs, and the hourly tape cost is still just \$4.

this report. It is several dB noisier than a professional 16-bit processor and almost 20 dB worse than the openreel system with DBX, but the background is virtually unchanged at any signal level. Except for the completely negligible 0.004 percent second-harmonic distortion, the curves with and without the test tone are within about 2 dB of each other. That's why this system sounds cleaner in loud passages than its analog competitors. It also has the flattest frequency response.

The PCM processor hits 3 percent distortion at 11/2 dB above where its overload light goes on; the decrease in headroom in the upper treble is due to a pre-emphasis circuit, which improves the signal-to-noise (S/N) ratio at high frequencies. Because digital systems clip abruptly when they are overloaded (instead of going into compression and gradually increasing distortion), it is trickier to take full advantage of their dynamic range than it is with analog recorders, which are

more forgiving of momentary headroom violations. However, an experienced engineer can usually set recording levels high enough to get the processor's very fast peak-reading meters up to -5 dB without risking audible overload. In practical terms, the system noise is inaudible unless you are recording the widest-range music with the very best professional microphones and electronics.

The digital system also is completely free of wow and flutter. On piano or steelstring acoustic guitar, it gives the sound a rock-steady quality that analog systems cannot match. Frequency response could almost be drawn with a ruler and (unlike that of conventional analog systems) is completely independent of tape type and requires no adjustment before recording.

Now let's look at the data for the Beta Hi-Fi videocassette recorder in Fig. 4 (right). Although these results superficially resemble those for the audio cassette deck, careful examination reyeals important differences. First, observe the noise floor: Between 125 Hz and 5 kHz, the curves are almost identical, but below and above this range the video deck is quieter, by 20 dB in the low bass and 10 dB at 15 kHz. And unlike the cassette deck, the Hi-Fi VCR exhibits no modulation noise immediately above or below 1 kHz in the plot of the test tone. Its distortion, on the other hand, is somewhat higher, at 0.7 percent, and there are signals beyond 3 kHz that must be either high-order distortion products or some artifact of the compander.

Mention of a compander may surprise you, but Hi-Fi VCRs do use noise reduction, as Fig. 4 proves. Not only does the hiss "pump" up and down with the signal, but so do a hum at 60 Hz and its harmonics at 120 and 240 Hz, probably produced by the system's head-switching. In many situations, these are not serious defects, however. At 45 dB below the signal,





the hiss will be masked by the upper midrange of most music. Likewise, the hum is more than 50 dB down, 15 dB or so below the noise floor of any LP at that frequency. In live recording, however, both the hiss and the hum can be heard to rise and fall with the music to an unforgivable degree. The VHS Hi-Fi units I have tested, which use a different noise reduction system, have less of this problem.

Though it is not suitable for recording wide-range live music, the Beta Hi-Fi VCR does an almost perfect job on most prerecorded material, partly because of two important attributes it shares with the PCM system: Its flutter is completely inaudible on any kind of music, and it does not need to be adjusted for different kinds of tape.

CONCLUSIONS

With their wide, flat frequency response and inaudible flutter, Beta and VHS Hi-Fi

VCRs are good enough to ensure against audible degradation of any video soundtrack, including the digital ones on some of the latest optical videodiscs. Their performance is superior to that of an audio cassette deck and does not vary with tape quality or recording speed. The system is reliable and cheap to operate, and available playing times (41/2 hours for Beta, as much as 8 hours for VHS) make the medium a natural for archival recording of broadcast concerts or operas, especially since it can capture these unattended. It also does an excellent job of copying records, tapes, and most CDs.

For live recording, Hi-Fi videocassettes suffer from audible defects not found in digital recordings or in openreel tape with noise reduction. Of the latter two, openreel tape is easier to edit, whereas PCM is slightly more accurate.

FLEXIBILITY AND EASE OF USE

Audio cassette recorders are portable and simple to operate. Finding selections on a tape is fast and easy—sometimes even automatic. But although a cassette deck with metal tape and Dolby C may perform reasonably well, the medium has limitations that make it unsuitable for serious recording. You cannot edit your tapes. And because the IEC standard for playback equalization is not universally adhered to, tapes recorded on one machine may not play properly on another, especially with Dolby C, which is very machine-sensitive. Because cassette tape runs at oneeighth the speed of its open-reel counterpart, high-frequency wavelengths are very short, making tape-to-head azimuth alignment a constant problem. The performance of the audio cassette at its best is remarkably good, but the system isn't robust or accessible enough for live recording.

Unless you're willing to spend many thousands of dollars for a professional portable model, a high-speed openreel recorder with outboard noise reduction is clumsy and difficult to lug around, as are the ten-inch reels it requires. But you can edit 15- or 30-ips open-reel tape to any desired degree of precision quickly and elegantly with about \$100 worth of tools. Tape shuttling is rapid and controllable, and you can cue by ear. The tape itself is accessible, tactile, immediate, and pleasant to work with. In addition, open-reel alignment tapes are sufficiently standardized that recordings can be reliably transported from machine to machine.

Consumer PCM processors weigh about ten pounds, and there are portable industrial-grade VCRs weighing even less, making a complete package that will fit into a single canvas tote bag. The digital system is wonderful both for live concerts and for broadcasts, where the VCR's programmability makes unattended recording a snap. But editing is another, and sadder, story. Simply finding your way around on a videocassette is a tedious process because of its slow winding speed and lack of audible cueing. (Modern Beta recorders that keep track of tape time during fast winds have a major advantage over VHS decks in this department.)

You can copy a PCM tape without loss or noise buildup and rearrange entire movements or selections on your tape, but home video recorders don't start and stop with enough precision to permit cutting into the middle of the music. To do that, you must transfer your recording to a professional PCM system and rent a digital editing suite. It works, but it's expensive: around \$85 an hour.

A Hi-Fi VCR, needing no external processor, is theoretically more convenient to carry around than a digital system, though portable decks are scarce. Even a tabletop model, however, is lighter than an open-reel recorder. Some Hi-Fi machines offer double-speed operation with audible cueing, making searches a bit easier, but if you need to cut and paste, Hi-Fi VCRs suffer from all the disadvantages of their PCM cousins without the option of professional editing as a backup.



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CAR STEREO '86

CD players and flashy Sahuaro flat-faced designs pace the new outosound entries.

EVEN IN THE absence of any dazzling new car stereo technologies at the recent Summer Consumer Electronics Show, excitement was evident. More companies are jumping on the Compact Disc bandwagon-which was predictable, considering the unrelenting demand for home models. However, Sony remains the sole company making an in-dash CD/tuner combination (the CDX-R7, \$699) Everyone else is sticking with CD-only players as add-ons to existing in-dash tuner/cassette decks. Still, as there exist in total only six production players and three prototypes-each offered by a separate manufacturer-it's somewhat premature to talk about a 1 SANTA "trend I CERMAND

On the other hand, as I forecasted following the Winter CES ("Road Sounds

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CAR STEREO '86

'85," May), the Yamaha CD player design, which uses an insertable sleeve to facilitate disc loading, is gaining adherents. In addition to Yamaha's new production model, the YCD-1000 (\$499), both the JVC and Blaupunkt prototype indash CD players operate with a similar protective sleeve.

Completely encased in plastic, the disc is read by the laser through a narrow slot, which opens when the disc is inserted and closes when it is removed. Initial plans call for Yamaha's players to be packaged with five sleeves; additional ones will cost about \$5 apiece. Besides protecting the CD from dirt and mishandling. the Yamaha sleeve eliminates much of the clumsiness of handling the current "jewel box" package while driving. Sony, which showed us a prototype of a different design earlier this year ("Road Sounds '85," May), has no plans to convert its models to a particular loading system and maintains that CD packaging itself will soon evolve. There has been talk between the CDsystem licensors (Sony and Philips) about developing a standard CD "caddy" package for use with all players.

Other production CD players shown at SCES were the Alpine 5900 (\$600), the Kenwood KCD-9 (\$659), and the Mitsubishi CD-100. The latter is offered in two configurations—one with an equalizer/ amplifier (\$699) and the other with both an amp and a digital tuner/cassette deck (\$999). Fujitsu Ten also showed a prototype player, but neither model number nor price was set at press time.

Since all CD players have fairly comparable specs, features, and pricing, Pioneer chose to emphasize that its new CD-P1 is both reliable and

BAJA CALIF NORTE San Quintin CODECARI CAR CD PLAYERS CALIF Several companies now offer CD players for cars, though only Sony's come bines the player with a tuner. Shown from top are Kenwood's KCD-9, Alpine's 5900, and Yamaha's YCD-1000, which uses a unique CD loading sleeve. PACIFIC OCEAN

shock resistant. A videotape presentation of the unit being tested on a rugged Baja road course in a Toyota 4Runner 4x4 pickup was convincing. However, the CD-XP1 complicates hookup somewhat by using DIN plugs instead of RCA input and output jacks.

FLAT-FACED FRONTS

Continuing a trend that first became evident at WCES, flatfaced, or DIN, radios are becoming more prominent in new entries, especially within the upper price range. By my count, about half of all new front ends were of this design.

Four of Alpine's new models are flat-faced, including the top-of-the-line 7374 (\$800)—a preamp-only unit with Dolby B and C and DBX. A new tape head and microprocessor-controlled transport mechanism are said to extend frequency response and reduce wow and flutter. An automatic head demagnetizer is said to eliminate any residual magnetism each time the deck is turned off. Like the 7374, the 7273 (\$600)—one of three integrated pieces—has its illumination circuitry tied into a sensor that increases the intensity as the interior light wanes. The green station presets turn orange when activated. Rounding out the new line are the 7272 (\$370) and the 7171 (\$250). All four models use an oversized LED display.

Concord's first DIN unit is the HPL-540 receiver/tape deck (\$549), which is one of the growing number of models switching back from LCDs to LEDs. Incorporating FNR, Concord's proprietary FM noise reduction system, the HPL-540 also provides Dolby B and C.

If the thought of losing your high-priced in-dash receiver to thieves gives you ulcers, Kenwood's new KRC-838 (\$619) may be the answer. Both it and the KRC-626 (\$479) can be readily removed from a permanent in-dash housing and slid back into place just as quickly, enabling you to take the unit with you. Kenwood also offers the KRC-424 (\$359), which is a standard flatfaced model.

Another company with security in mind is Aiwa, whose three new models come with a flip-down front: Closed, the door hides the unit; open, it both reveals the front panel and contains some of the controls. Prices are expected to range from approximately \$350 for the CT-X300 to about \$600 for the CT-X500. All have digital tuners and Dolby noise reduction.



Sony has seven new DIN decks. Leading off the line is the XR-900 (\$600), a tuner/cassette player with Dolby B and C. quick-access cut selection, and impulse noise suppression (INS). At \$400, the XR-780 receiver/cassette deck is rated at 20 watts for each of its four channels and includes preampout jacks, Dolby B, automatic music search, and dual-adjust head alignment. The XR-740 (\$300) is similar to the XR-780, but lacks Dolby and INS. Expanding its standard XR Series, Sony has four units ranging in price from \$430 to \$225. Top model is the XR-80 receiver/cassette deck, which has Dolby B and C, automatic scan, INS, and dual-adjust head alignment. Preamp outputs permit easy connection to a separate CD player.

Also adding to its DIN line is Sansui, with one high-power and two standard receiver/ cassette decks. The high-power model is the RX-610 (\$379), an autoreverse unit with Sansui's proprietary Automatic Stereo Reception Controller, which is designed to reduce noise and provide a stable signal under varying driving and reception conditions. Other features include Dolby B and automatic seek and scan. The standard DIN units are the RX-4010 (\$299) and the RX-3010 (\$259) The 4010 has Dolby B; the 3010, a proprietary noise-filter system.

Proton offers the flatfaced Model 214 and 203 receiver/cassette decks. The 214 (\$375) incorporates Dolby B and C, automatic program search, and preamp outputs. Both have Schotz tuners for improved reception.

Wrapping up the DIN introductions is Marantz, with two of its three new decks: the CAR-372 (\$300) and CAR-362 (\$240). The 372 is an autoreverse model with Dolby B and Compuskip, an automatic music search system.

A familiar name in the car stereo field, Panasonic has a number of high-power entries. Top-of-the-line is the CQ-E650, an autoreverse model with automatic tape-EQ selection, Dolby B and C and DBX, and a reversed LCD to show operational functions sharply, even in bright daylight. Also new are the CQ-E280, CQ-E330, CQ-E370-all autoreverse receiver/cassette decks-and the CQ-E400, an automatic-replay unit. Prices range from \$300 to \$180.

Another established company with new front ends is Pioneer, which has introduced the KP-A170 mini autoreverse tuner/cassette deck (\$150) and the KP-A100 (\$135). The KP-A170 has a built-in impulsenoise suppressor.

STEREO AM

If Compact Disc players and DIN design are the hare, stereo AM is the tortoise in car stereo trends. And emerging as the leader may take some doing. Stereo AM was supposed to electrify the car stereo market with its longrange, low-noise reception capability, yet there is a singular lack of new products incorporating this circuitry. One reason could be that four incompatible systems still are in use, though the Motorola C-QUAM design is gaining favor.

Although a number of companies (including Sansui and Sparkomatic) did introduce stereo AM models at WCES, the lone entry at SCES came from Sony, whose XR-A33 (\$250) circumvents the compatability problem with a decoding chip that switches automatically to whichever broadcasting format is being received.



ETRS, NEW NAMES, AND MORE

Initial offerings in front ends come from a number of manufacturers, including EPI, which has confined itself to speakers until now. Its three models are receiver/cassette decks, which range in price from \$370 to \$220. Heading the new series is the LSR-34, which has Dolby B, automatic music search, a stereo FM reception optimizer, digital frequency-synthesis tuning, and preamp outputs.

New to the car stereo field is Peconic Car Audio and Communications, of Elk Grove Village, Illinois. It has introduced two shaftless and three standard designs, all with digital tuners. Top model in the 6000 (shaftless) Series is the 6700, which has pushbutton volume control and tuning, DNR, and automatic seek and scan.

Among other companies offering ETR (electronically tuned radio) designs is Sparkomatic, with four models from \$300 to \$100. Heading the line, which comprises models SR-315, -308, -314, and -338, is the SR-315—an autoreverse receiver/cassette deck with DNR, Dolby B and C, and a mono/stereo switch.

Next month, in our special speaker issue, we'll cover car speakers, including the latest in "digital ready" models.

TEST REPORTS



DBX DX-3 COMPACT DISC PLAYER

Dimensions: 171/4 by 33/4 inches (front), 11 inches deep plus clearance for controls and connections. Price: \$599. Warranty: "limited," one year parts and labor. Manufacturer: made in Japan for DBX, Inc., 71 Chapel St., Newton, Mass. 02195.

lthough it would be unfair to say that all Compact Disc players are alike, few have features that are genuinely unique, and most are so close to one another in performance that choosing among them on that basis alone would be difficult, if not pointless. DBX's first player is therefore unusually interesting. An acknowledged leader in signal processing, the company has brought its expertise to bear on what it sees as the special problems of CD playback. The result is a group of circuits that enable you to modify in various ways the signal coming off a disc, shaping it to your taste and listening situation.

You control these circuits with two knobs at the bottom right of the front panel. When they are pointing straight up, the signal passes to the output unchanged, or you can take the processing circuitry completely out of the signal path with a bypass switch (handy for fast A/B comparisons). The knob at the left, labeled Dynamics, activates a compressor when turned to the left and what DBX calls DAIR (digital audio impact restoration) when turned to the right.

A compressor boosts soft passages

and attenuates loud ones, thereby reducing the overall dynamic range. Compressors designed for home use have been rare because until the advent of the Compact Disc there was little need for them. The push was all in the other direction: to milk more dynamic range out of signals already squeezed to the point of lifelessness in the recording or broadcast studio. Material suffering from this deficiency is still with us, but the Compact Disc has for the first time made the opposite condition a matter of real concern. It is possible to get more dynamic range than you can comfortably accommodateespecially in your car, where road noise may drown out the soft portions of the music unless you turn up the volume to the point of making the loud parts earsplitting. The compressor in the DX-3 is based on DBX's highly regarded professional models. You can use it to reduce the music's dynamic range by as much as 36 dB, for background listening at home or for making tapes for car or personalportable playback.

Turning the same control to the right of 12 o'clock activates the DAIR circuit, which is a type of peak unlimiter. When it Report preparation supervised by Michael Riggs, David Ranada, Robert Long, and Edward J. Foster. Laboratory data (unless otherwise indicated) is supplied by Diversified Science Laboratories. sees a fast transient, it boosts the leading edge to compensate for any limiting that may have been applied in the making of the original recording. How strong a kick it gives the signal is determined by the relative amplitude of the incoming peak and the setting of the control, up to a maximum of 10 dB. Although it might seem that CDs shouldn't require such treatment, the fact is that they are only as good as the recordings from which they are made. Analog tape saturation, studio limiters (used for effect or to prevent tape overload), and so forth can blunt the impact of kick drums, brass, cymbals, and other instruments before the sound ever gets to disc. DAIR is designed to put back some of what's taken out by such processes.

A common problem with such circuits is that a bass-drum whack, for example, can cause high-frequency signals to be "unlimited" along with it, which can sound quite unnatural. DBX has gotten around this potential difficulty by making DAIR a sophisticated two-band system that operates on the high and low frequencies independently. The circuit's action in each band is shown by a pair of segmented LED displays. When the compressor is engaged, these show the amount by which soft passages are being brought up, while a third display, between them, indicates the amount by which peaks are reduced.

The last of the DX-3's special features is controlled by the right-hand "ambience" knob. It affects the "stereoness" of the signal at mid and high frequencies. Turned to the left, it progressively blends the channels, reaching mono at its extreme setting. More likely, however, you will want to turn it slightly to the right, to add some extra difference information (L-R and R-L) to the signal. This tends to open up the sound, increasing its apparent spaciousness and depth.

DBX incorporated the ambience feature in response to the complaints of some audiophiles that CDs sound dry and two-dimensional compared to analog records. (It often is assumed that this is a fault of the digital system; in fact, it probably is a reaction to the absence of the spurious difference information typically produced by phono cartridges.) The circuit does not affect the low frequencies because many recordings are almost mono in the deep bass (to make the cutting of conventional records easier): Increasing a signal's difference content correspondingly reduces its mono content and would therefore cause the bass to be attenuated on recordings with substantial bottom-end blend.

The rest of the DX-3's features are pretty standard. It uses two-times oversampling (88.2 kHz) with digital noise filtering followed by a gentle (18 dB per octave) analog output-smoothing filter. You can program it to play as many as nine tracks in any order, and you can set it to repeat the programmed sequence or, if you haven't entered one, the entire disc. The SCAN skims through the music in either direction at a well-chosen pace, with or without audible output, and DBX has provided for cueing (though not programming) by index number. You can set the main display to show the current track number or the elapsed time for the track being played (or, if the player is stopped, the disc's total playing time).

Diversified Science Laboratories' measurements show good performance in all the basic categories. Response is less flat than we're used to seeing, because of a small bump in the top octave followed by a rolloff, but it is still much better than can be obtained from most phono cartridges. And apart from this tiny peak, there are none of the small ripples that some other oversampling players create (often down to frequencies of just a few kilohertz). The effects of the oversampling system are evident in the square-wave and impulse responses, however, with both showing excellent symmetry and freedom from ringing.

Channel balance is within a tenth of a dB of perfection, and channel separation exceeds 56 dB from 100 Hz up. Together, these ensure stereo reproduction second to none. Distortion and noise are more than adequately low, though the D/A (digital to analog) converter does show more nonlinearity at very low levels than do most. This is not normally any cause for concern, however, since these effects should be below the threshold of audibility on typical material, and we did not note any problem in our auditioning. Distortion and noise increase at some setData were obtained with all signal-processing options defeated using the Sony YEDS-7, Technics SH-CD001, Philips 410 055-2, and Philips 410 056-2 test discs.

FREQUINCY RESPONSE

DB	1111	
0		
-5		DA 3
HZ 20 50 100 200	500 1K 21	K 5K 10K 20P
L ch	±1 dB, 20 H;	z to 20 kHz
R ch	±1 dB, 20 H;	z to 20 kHz
DE-EMPHASIS ERROR		
eft channel	+ 1/20 df	3, 1 to 16 kHz
right channel	+ 1/4, -0 d	3, 1 to 16 kHz
CHANNEL SEPARATION	(at 1 kHz)	75 dB
CHANNEL BALANCE (at 1	kHz)	± < 1/4 dB
S/N RATIO (re 0 dB; A-w	(hted)	
without de-emphasis	eignicut	87 dB
with de-emphasis		96 dB
HARMONIC DISTORTION	(THO + N: 40	Hz to 20 kHz)
at 0 dB	1110 11, 10	< 0.01%
at -24 4B		< 0.024%
IM DISFORTION (70-Hz d		
0 to -20 dB	Allerence, 300	< 0.01%
ot - 30 dB		0.017%
		0.017/6
LINEARITY (at 1 kHz)		
0 to -50 dB	no measurable	eiror
at -60 dB	+ 1/2 d8	
at - 70 dB	+1 dB	
at -80 dB	+ 4 dB	
at –90 dB	+11 1/4 dB	
TRACKING & ERRDR-CO	RRECTION	
maximum signal-layer ga	P	≥ 900 µm
maximum surface obstru	ction	≥ 800 µm
simulated-fingerprint tes	it	pass
MAXIMUM OUTPUT LEV	EL	1 91 volts
OUTPUT IMPEDANCE		330 ohms

REPORT POLICY

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

tings of the processor controls, particularly when high compression is used, but not to an undue degree. In fact, we were pleasantly surprised at the cleanness of these circuits.

The DX-3 also performed well on the critical tracking and error-correction tests, passing at even the highest levels of difficulty. DSL did report that there may have been some very slight ticking at the 900-micrometer level of the signallayer interruption test, but it was not sure, and, in any case, the effect was certainly very, very minor. Output level and impedance are well chosen.

We were consistently pleased with the DX-3 in the listening room. It's fast and easy to use, and if any questions do arise, you probably will find a thorough, clear answer in the unusually well-written user's manual. The signal-processing options worked exactly according to DBX's descriptions. Perhaps most obvious is the effect of the ambience control, which can indeed impart a nice sense of spaciousness to overdry recordings. We found ourselves leaving it cocked slightly to the right for much of our listening. The compressor also performs its intended function, and with few of the distracting side effects that can be generated by such circuits. About the only thing you're likely to notice is a slight increase in noise when it pulls up the bottom of the range.

Despite its name, the impact restoration is perhaps the most subtle of the three options: It does not bang you on the head to get your attention. What it does do is add a little extra life and excitement to the music. Sometimes the effect is barely noticeable, other times it yields a sense of drama only hinted at in the unprocessed sound. Perhaps the nicest thing about DAIR is how natural it sounds. We found it very hard to get anything even approaching the peculiarities that are easy to obtain with typical expanders, for example. When DAIR does something to the signal, the chances are very good that you will like it.

All in all, the DX-3 is a breath of fresh air, incorporating features unavailable in any other CD player. This, combined with its ease of use and respectable basic performance, make it a strong contender in its price class and well worth your consideration. SQUARE-WAVE RESPONSE (1 kHz)



IMPULSE RESPONSE



ROTEL RA-840BX INTEGRATED AMPLIFIER

Dimensions: 17 by 2½ inches (front), 11½ inches deep plus clearance for controls and connections. Price: \$350. Warranty: "limited," two years parts and labor. Manufacturer: The Rotel Company, Ltd., Japan; U.S. distributor: Rotel Audio of America, P.O. Box 653, Buffalo, N.Y. 14240.



To those who remember Rotel mainly for its rather gaudy, me-too electronics of the late Seventies, the current line probably will come as something of a shock. Minimalism definitely is the order of the day. The reason is new management, bent on audiophile quality at rea-

sonable prices, even if that means sacrificing a few frills. Indeed, Rotel argues that the extras we usually take for granted in contemporary equipment often get in the way of obtaining the best possible sound.

This philosophy is perhaps most obvi-

ous in the company's two integrated amps: the RA-820BX and the more powerful RA-840BX, under review here. Their front panels seem almost blank compared with those of most of their competitors. In fact, however, the only significant omissions are tone and balance controls, and the latter's function is picked up by the VOLUME, which has separate, clutched elements for each channel. Thus, you can set levels independently for each channel to achieve the desired left-right balance. This is clumsier than the usual one-knob approach, but it does work and eliminates a circuit element that is not strictly necessary.

The money that ordinarily would go for more features has instead gone into better parts and higher performance. In the RA-840BX, this means close-tolerance metal-film resistors wherever practical, 1-percent polystyrene capacitors in the phono equalization network, and high-grade capacitors throughout the signal path. Shielded, oxygen-free copper cable links the gold-plated phono input jacks to the circuit board, and heavy, low-loss wiring returns the amplified signals to the sturdy output terminals. The binding posts themselves are color-coded and will accept bared wire (even very thick varieties), spade lugs, or banana plugs.

Circuit refinements include the use of four 12-amp output transistors per channel-an extraordinary complement for a unit of this power rating and price. Rotel says this enables the amplifier to drive low-impedance or otherwise difficult loudspeaker loads without distress and to dispense with the usual currentlimiting protection circuitry, which can unnecessarily restrict power output and add distortion. And though we've been harping on the RA-840BX's simplicity, it does provide such niceties as an input for moving-coil phono cartridges, a mono switch, and dual tape monitor loops with dubbing from Tape 1 to Tape 2.

Diversified Science Laboratories' measurements show that the RA-840BX handily exceeds its power specification into 8 ohms and continues to increase its output all the way down to 2 ohms, where it is capable of more than 100 watts on a short-term, dynamic basis. Noise and distortion are well contained, and overload levels are much more than adequate through all inputs. Input sensitivities and impedances are appropriate, and though the output impedances at the tape jacks are higher than we would prefer, they are not likely to be a problem unless you have a considerably longer than average cable run to your tape deck. Although the damping factor is only moderate in the bass, it drops so slightly with increasing frequency that from 5 kHz up it actually is higher than average. Channel separation is 40 dB or more below 10 kHz, which is all you need and then some.

Rotel has kept the RA-840BX's bandwidth to sensible limits, maintaining flat response across almost the entire audible band, then gradually rolling it off above and below. The effect is quite mild through the high-level inputs, which show just a tiny droop at the very bottom of the range. The phono stage appears to have an additional high-pass (low-cut) filter of its own that rolls off at about 6 dB per octave below maybe 15 Hz. This results in a very slight loss at low audio frequencies. The fixed-coil input is dead flat to 60 Hz and down just 1/2 dB at 30 Hz; the moving-coil input is flat to 90 Hz and 11/2 dB down at 30 Hz. In neither case would we expect significant audible consequences (we didn't hear any), except perhaps some distortion reduction from the attenuation of warp-induced infrasonic signals. A sharper filter (12 dB or more per octave) would flatten out the deep-bass response while completely squelching warp signals, but it also would raise the price.

Overall, the RA-840BX is a fine little amp, well built and capable of excellent performance. We miss the balance and tone controls, but the former is seldom used (making the substitution of a split volume knob less awkward in practice than it might at first appear) and the latter can be added by way of an external equalizer, if desired. Their importance is, in any case, very much a matter of personal taste. And all of the controls that are present have a smooth, positive action sometimes missing from much more expensive products. At its price, the RA-840BX ranks high among the integrated amps on the market and definitely warrants serious consideration.

RATED POWER	16 dBW (40 wat	itaji endimer
DUTPUT AT CLIPPING (at 1	kHz; both chan	inels driven)
B-ohm load	17 1/2 dBW (56	watts)/channel
4-ohm load	19 dBW (79 wat	tts) / channel
DYNAMIC POWER (at 1 kH	z)	
8-ohm load		18 1/4 dBW
4-ohm lozd		19 1/2 dBW
2-ohm load		20 1/2 dBW
DYNAMIC HEADROOM (re	rated power; 8	ohm load)
		+2 1/4 dB
HARMONIC DISTORTION	(THD; 20 Hz to 2	(O kHz)
at 16 dBW (40 watts)		≤ 0.047%
at 0 dBW (1 watt)		≤ 0.045%
FREQUENCY RESPONSE		
+ 0, - 1/2 dB, 23	Hz to 30.4 kHz;	
+03 dB. < 10		
RIAA PHONO EQUALIZATI	DN	
DB		
0		
-5		
	500 1K 2K	RA 8408X 5K 10K 2
-5		5K 10K 2 , 20 Hz to 20 kHz:
-5 HZ 20 50 100 200	+0, -1 1/4 dB -12 3/4 dB at 5	5K 10K 2 , 20 Hz to 20 kHz; Hz dB, 20 Hz to 20 kH
-5 HZ 20 50 100 200	+0, -1 1/4 dB -12 3/4 dB at 5 c) + 1/4, -2 3/4 -14 1/4 dB at 5 0 dBW; A-weig	5K 10K 2 , 20 Hz to 20 kHz: Hz dB, 20 Hz to 20 kH Hz hting)
-5 HZ 20 50 100 200 	+0, -1 1/4 dB -12 3/4 dB at 5 () + 1/4, -2 3/4 d -14 1/4 dB at 5 0 dBW; A-weig sensitivity	5K 10K 2 , 20 Hz to 20 kHz: Hz dB, 20 Hz to 20 kH Hz hting) S/N ratio
-5 H2 20 50 100 200 fixed-coil (MM) moving-coil (MC) SENSITIVITY & NDISE (re aux	+0, -1 1/4 dB -12 3/4 dB at 5 C) + 1/4, -2 3/4 -14 1/4 dB at 5 O dBW; A-weig sensitivity 34 mV	5K 10K 2 , 20 Hz to 20 kHz; Hz dB, 20 Hz to 20 kH Hz hting) S/N ratio 87 3/4 dB
-5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -	+0, -1 1/4 dB -12 3/4 dB at 5 () + 1/4, -2 3/4 d -14 1/4 dB at 5 0 dBW; A-weig sensitivity 34 mV 0.5 mV	5K 10K 2 , 20 Hz to 20 kHz; Hz dB, 20 Hz to 20 kl Hz hting) S/N ratio 87 3/4 dB 77 dB
-5 H2 20 50 100 200 fixed-coil (MM) moving-coil (MC) SENSITIVITY & NDISE (re aux	+0, -1 1/4 dB -12 3/4 dB at 5 C) + 1/4, -2 3/4 -14 1/4 dB at 5 O dBW; A-weig sensitivity 34 mV	5K 10K 2 , 20 Hz to 20 kHz; Hz dB, 20 Hz to 20 kH Hz hting) S/N ratio 87 3/4 dB
-5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -	+0, -1 ¹ / ₄ dB -12 ³ / ₄ dB at 5 c) + 1/ ₄ , -2 ³ / ₄ i -14 ¹ / ₄ dB at 5 0 dBW; A-weig sensitivity 34 mV 0.5 mV 42 µV	5K 10K 2 20 Hz to 20 kHz; Hz dB, 20 Hz to 20 kH Hz hting) S/N ratio 87 3/4 dB 77 dB 75 dB
-5 HZ 20 50 100 200 fixed coil (MM) SENSITIVITY & NDISE (re aux fixed-coil (MM) phono moving-ceil (MC) phono INPUT OVERLOAD (1-kHz o aux	+0, -1 ¹ / ₄ dB -12 ³ / ₄ dB at 5 c) + 1/ ₄ , -2 ³ / ₄ i -14 ¹ / ₄ dB at 5 0 dBW; A-weig sensitivity 34 mV 0.5 mV 42 µV	5K 10K 2 , 20 Hz to 20 kHz; Hz dB, 20 Hz to 20 kH Hz S/N ratio 87 3/4 dB 77 dB 75 dB > 10 volts
-5 HZ 20 50 100 200 fixed-coil (MM) SENSITIVITY & NDISE (re aux fixed-coil (MM) phono INPUT OVERLOAD (14HZ r aux fixed-coil (MM) phono	+0, -1 ¹ / ₄ dB -12 ³ / ₄ dB at 5 c) + 1/ ₄ , -2 ³ / ₄ i -14 ¹ / ₄ dB at 5 0 dBW; A-weig sensitivity 34 mV 0.5 mV 42 µV	5K 10K 2 20 Hz to 20 kHz: Hz 86, 20 Hz to 20 kH Hz hting) S/N ratio 87 3/4 dB 77 dB 75 dB > 10 volts 200 mV
-5 HZ 20 50 100 200 fixed coil (MM) SENSITIVITY & NDISE (re aux fixed-coil (MM) phono moving-ceil (MC) phono INPUT OVERLOAD (1-kHz o aux	+0, -1 ¹ / ₄ dB -12 ³ / ₄ dB at 5 c) + 1/ ₄ , -2 ³ / ₄ i -14 ¹ / ₄ dB at 5 0 dBW; A-weig sensitivity 34 mV 0.5 mV 42 µV	5K 10K 2 , 20 Hz to 20 kHz; Hz dB, 20 Hz to 20 kH Hz S/N ratio 87 3/4 dB 77 dB 75 dB > 10 volts
-5 HZ 20 50 100 200 fixed-coil (MM) SENSITIVITY & NDISE (re aux fixed-coil (MM) phono INPUT OVERLOAD (14HZ r aux fixed-coil (MM) phono	+0, -1 ¹ / ₄ dB -12 ³ / ₄ dB at 5 c) + 1/ ₄ , -2 ³ / ₄ i -14 ¹ / ₄ dB at 5 0 dBW; A-weig sensitivity 34 mV 0.5 mV 42 µV	5K 10K 2 20 Hz to 20 kHz: Hz 86, 20 Hz to 20 kH Hz hting) S/N ratio 87 3/4 dB 77 dB 75 dB > 10 volts 200 mV
-5 HZ 20 50 100 200 fixed-coil (MM) SENSITIVITY & NDISE (re aux fixed-coil (MM) phono INPUT OVERLOAD (14HZ of aux fixed-coil (MM) phono moving-ceil (MC) phono	+ 0, -1 1/4 dB -12 3/4 dB at 5 () + 1/4, -2 3/4 -14 1/4 dB at 5 () + 1/4, -2 3/4 -14 1/4 dB at 5 () + 1/4, -2 3/4 -14 1/4 dB at 5 () + 1/4 dB	5K 10K 2 , 20 Hz to 20 kHz; Hz 48, 20 Hz to 20 kH Hz S/N ratio 87 3/4 dB 77 dB 75 dB > 10 volts 200 mV 17 mV
-5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -	+ 0, -1 1/4 dB -12 3/4 dB at 5 2) + 1/4, -2 3/4 -14 1/4 dB at 5 0 dBW; A-weig sensitivity 34 mV 0.5 mV 42μV clipping) 18k ohms 48.7k ohms; 22	5x 10x 2 ,20 Hz to 20 kHz; Hz 48,20 Hz to 20 kH Hz 5/N ratio 87 3/4 dB 77 dB 75 dB > 10 volts 200 mV 17 mV
-5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -	+ 0, -1 1/4 dB -12 3/4 dB at 5 () + 1/4, -2 3/4 -14 1/4 dB at 5 () + 1/4, -2 3/4 -14 1/4 dB at 5 () + 1/4, -2 3/4 -14 1/4 dB at 5 () + 1/4 dB	5K 10K 2 , 20 Hz to 20 kHz; Hz 48, 20 Hz to 20 kH Hz S/N ratio 87 3/4 dB 77 dB 75 dB > 10 volts 200 mV 17 mV
-5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -	+ 0, -1 1/4 dB -12 3/4 dB at 5 2) + 1/4, -2 3/4 -14 1/4 dB at 5 0 dBW; A-weig sensitivity 34 mV 0.5 mV 42μV clipping) 18k ohms 48.7k ohms; 22 310 ohms	5K 10K 2 , 20 Hz to 20 kHz; Hz 48, 20 Hz to 20 kH Hz S/N ratio 87 3/4 dB 77 dB 75 dB > 10 volts 200 mV 17 mV
-5 HZ 20 50 100 200 fixed-coil (MM) SENSITIVITY & NDISE (re aux fixed-coil (MM) phono INPUT OVERLOAD (1-kHz of aux fixed-coil (MM) phono moving-ceil (MC) phono INPUT INPEDANCE aux fixed-coil (MM) phono moving-ceil (MC) phono moving-ceil (MC) phono	+ 0, -1 1/4 dB -12 3/4 dB at 5 2) + 1/4, -2 3/4 -14 1/4 dB at 5 0 dBW; A-weig sensitivity 34 mV 0.5 mV 42μV clipping) 18k ohms 48.7k ohms; 22 310 ohms	5x 10x 2 ,20 Hz to 20 kHz; Hz 48,20 Hz to 20 kH Hz 5/N ratio 87 3/4 dB 77 dB 75 dB > 10 volts 200 mV 17 mV
-5 HZ 20 50 100 200 fixed coil (MM) SENSITIVITY & NDISE (re aux fixed-coil (MM) phono moving-ceil (MC) phono INPUT OVERLOAD (1-kHz of aux fixed-coil (MM) phono moving-ceil (MC) phono INPUT INPEDANCE aux fixed-coil (MM) phono moving-ceil (MC) phono OUTPUT IMPEDANCE (MC) phono OUTPUT IMPEDANCE (to)	+ 0, -1 1/4 dB -12 3/4 dB at 5 2) + 1/4, -2 3/4 -14 1/4 dB at 5 0 dBW; A-weig sensitivity 34 mV 0.5 mV 42μV clipping) 18k ohms 48.7k ohms; 22 310 ohms	5K 10K 2 , 20 Hz to 20 kHz: Hz 86, 20 Hz to 20 kH Hz S/N ratio 87 3/4 dB 77 dB > 10 volts 200 mV 17 mV 5 pf
-5 HZ 20 50 100 200 fixed-coil (MM) SENSITIVITY & NDISE (re aux fixed-coil (MM) phono moving-ceil (MC) phono INPUT OVERLOAD (1-kHz of aux fixed-coil (MM) phono moving-ceil (MC) phono INPUT NUPEDANCE aux fixed-coil (MM) phono moving-ceil (MC) phono INPUT IMPEDANCE aux fixed-coil (MC) phono moving-ceil (MC) phono COUTPUT IMPEDANCE (to from aux input	+ 0, -1 1/4 dB -12 3/4 dB at 5 -12 3/4 dB at 5 -14 1/4 -2 3/4 - -14 1/4 dB at 5 0 dBW; A-weig sensitivity 34 mV 0.5 mV 42 μV clipping) 18k ohms 48.7k ohms; 22 310 ohms tape)	5x 10X 2 20 Hz to 20 kHz: Hz 86, 20 Hz to 20 kH Hz S/N ratio 87 3/4 dB 77 dB 75 dB > 10 volts 200 mV 17 mV 5 pf 3.350 ohms

ABOUT THE dBW

We currently are expressing power in terms of dBW--meaning power in dB with a reference (0 dBW) of 1 watt. The conversion table will enable you to use the advantages of dBW in comparing these products to others for which you have no dBW figures.

WATTS	dBW	WATTS	dBW
1.0	0	32	15
1.25	1	40	16
1.6	2	50	17
2.0	3	63	18
2.5	4	80	19
3.2	5	100	20
4.0	6	125	21
5.0	7	160	22
6.3	8	200	23
8.0	9	250	24
10.0	10	320	25
12.5	11	400	26
16.0	12	500	27
20.0	13	630	28
25.0	14	800	29

KYOCERA PL-601 TURNTABLE

Dimensions: 18 by 15 inches (top plate plus wood end pieces), 6 inches high with cover closed; additional 11 inches vertical clearance and 3 inches at back required to open cover fully. Price: \$350. Warranty: "limited," one year parts and labor. Manufacturer: Kyoto Ceramic Co., Ltd., Japan; U.S. distributor: Kyocera International, Inc., 7 Powder Horn Dr., Warren, N.J. 07060-0227.



The Kyocera PL-601 is a classic sort of turntable in both appearance and design. A few key functions are automated, but it is essentially a beltdrive manual model in which tonearm mount and platter assembly are suspended on their own subchassis. The arm is a straight tubular design with a carbonfiber plug-in headshell. The controls are ranged along the front, where you can use them without opening the dust cover, and they include individual adjustments for each of the operating speeds (33 and 45 rpm).

To aid in setting the speed, a strobe disc is built into the top of a supplied hold-down "stabilizer" weight, one of several touches (the arm design is another) that proclaim this a turntable of the Eighties, whatever its lineage. Actual adjustment range of the two speeds is a little greater (at least on the plus side) than Kyocera's ± 3 -percent spec suggests: Diversified Science Laboratories' measurements show that you can raise (sharpen) the pitch by about a half-tone (6 percent) or decrease it by about a quarter-tone. The flush knobs have striated surfaces so that they can be rotated with a fingertip but are virtually impossible to misadjust accidentally.

When you move the tonearm away from its rest (which is fitted with a protective catch to hold it there when you're not actually playing a disc), the platter starts turning at the selected speed. Though the motor doesn't provide the torque of more typical turntables, it has enough to permit easy use of a Discwasher or similar device, which isn't true of some other belt-drive units. Cueing is entirely manual except for the actual up/down arm motion, whose gentle, motorized action is controlled from the front panel. When the arm is raised during play, there is no tendency toward side drift, so you can resume play exactly where you left off. When the arm reaches the leadout-groove diameter, it rises automatically and the platter shuts off.

Because recordings often run closer to the spindle hole on 7-inch discs than they do on standard 12-inchers, Kyocera supplies a switch to select the position at which the arm lifts. At the 7-inch setting, the PL-601 wouldn't raise the tonearm at the end of the LPs with which we tried it:

	SPEED	ACCURACY	(105 to 27 VAC)
--	-------	----------	-----------------

no measura	ble error at either speed	
SPEED ADJUSTME	NT RANGE	
at 33 rpm	+ 6.6% to -3.1%	
at 45 rpm	+7.8% to -4.4%	
WOW & FLUTTER (ANSI weighted peak)	
average		±0.07%
maximum		±0.08%
TDTAL AUDIBLE RU	IMBLE (ARLL)	≈-73 3/4 d8
EFFECTIVE TONEAF	MMASS	≈ 18 grams*
VTF-GAUGE ACCUP	ACY	
reads 0.1 g	ram low at 0.5-gram setting	
TOTAL LEAD CAPA	CITANCE	200 pF

"With supplementary counterweight to balance standard cartridges. Mass will be significantly lower if a lightweight pickup is used. See text. at the 12-inch setting, some 7-inchers wouldn't play all the way through. Resolving this conflict apparently is the switch's sole function. The arm also lifts automatically when you turn off the main power switch, so you can't back-cue with the PL-601—which is just as well, considering the damage that nonruggedized home pickups can cause to records and themselves if used that way.

The arm is essentially a low-mass design, though unless you have a lightweight cartridge as well, you must use a supplementary counterweight that raises it into the medium-mass range. For DSL's standard measurement cartridge, it would not balance without the extra weight, which therefore is reflected in the effective mass figure in our data column. This, in turn, means that you should avoid extremely compliant pickups of more than medium weight hecause the mass-compliance combination can drive resonance down into the warp region and make good tracking more difficult to achieve.

A further complication is the PL-601's sensitivity to external vibration, despite its sprung-subchassis suspension. With our standard listening-test pickup, which violates the rule of the previous paragraph by being heavier and more compliant than would be ideal for the Kyocera, any shock to the top plateeven a light touch on the controls or dust cover-produced audible output, and footfalls often caused mistracking. Switching to a somewhat lower-compliance pickup light enough (at 4 grams) to be balanced without the supplementary counterweight, we found the situation much improved, but the turntable was still a little touchy. The moral is that you must choose your pickup carefully and mount the turntable on a rigid, stable surface if you are to use the PL-601 successfully.

And it's worth the extra care. Flutter is low, and the rumble figures are exceptionally good. Speed accuracy is spot-on (thanks, in part, to the separate adjustments) and unaffected by line voltage (thanks to a servo DC drive motor). Stylus-gauge accuracy measured exactly as it should except at the lowest setting, which is below the normal range required by pickup cartridges and is off by only an unimportant tenth of a gram in any event.

Most important of all, however, we're impressed by the PL-601's human engineering. It has enough extra features to spare you the penalties exacted by most other manual turntables (like listening to the stylus swoosh around in the final groove while you're otherwise occupied), but it is not automated to the point of getting in your way-except, as noted earlier, if you are a dyed-in-the-disco back-cuer, in which case you presumably should be looking for a different sort of turntable altogether. We also appreciate its quiet good looks, which give the PL-601 a touch of dignity absent from many competing models.

HARMAN KARDON CH-160 CAR TUNER/TAPE DECK

Dimensions: 7 by 2 inches (chassis front), 6 inches deep; escutcheon, 7½ by 2¼ inches; "nose," 4¼ by 2 inches; main shafts, 5 to 5¾ inches o.c. Connections: bared wire for ignition and battery; flat female for power antenna and power-amp switching; spade lug for ground; female pin jacks for output; standard coaxial female for antenna input. Fuses: 1-amp in ignition and battery lines. Price: \$475. Warranty: "limited," one year parts and labor. Manufacturer: made in Japan for Harman Kardon, 240 Crossways Park West, Woodbury, N.Y. 11797.



arman Kardon, a relatively recent entrant in the highly competitive autosound field, makes a convincing case for itself with the CH-160. It is handsome, well thought out, and an excellent performer. Its FM behavior, for example, is significantly better than that of most models that we have reviewed. But we'll get to that in due course.

First, a quibble: The treble control is a bit more awkward to use than we would have liked. It is the middle ring on a control cluster that includes the volume/balance knob and the bass-control ring. The latter has a little tab that makes it easy to manipulate. But the treble ring is both tab-less and harder to move (at least on our test sample); we found it almost impossible to adjust without also changing the volume. Also annoying at first were the tiny switches and, particularly, their legends, which are much too small to read while you're driving. The importance of reading the labeling correctly is compounded by making two of the switches do double duty, depending on whether you're using the tuner or the deck. But as long as you memorize the switch positions first, you're all right. In that regard, the frontpanel layout is excellent-neater and more logical than average, with adequate spacing between the buttons (a result of their being so small), and including a digital clock in the LCD readout.

The cassette deck is unidirectional (which may give it an edge in reliability over mechanically more complex autoreversing models) and ejects the cassette automatically when the ignition is shut off. It is independent of the CH-160's power switch (activated by pushing the volume knob); you can play a tape without turning on the tuner, and you can turn off the tuner without stopping the tape. If the tuner is switched on, the radio will play whenever you remove a cassette or fast-wind it in either direction. We find this sort of intrusion annoying, but some users evidently consider it a desirable feature, and the CH-160 does give you the ability to defeat it.

You are also given options for playback EQ (for once correctly labeled as "70 microseconds," rather than "metal") and Dolby noise reduction (B and C, as well as OFF). Frequency response is very good, though head azimuth doesn't agree with that of our BASF test tape as well as the curve's treble extension might imply. Speed is only slightly fast and varies hardly at all with supply voltage (from 1.0 percent fast at 14.4 volts to 1.2 percent fast at 10.8 volts). Flutter is reasonably low for a car player; more important, road shock produced no perceptible waver in any of our tests.

The CH-160's tuning controls (on the right side of the front panel) are large rocker buttons for up/down manual tuning and seek/scan automatic tuning. SEEK locks onto the next receivable station in the chosen direction, while SCAN just plays the station for eight seconds and then continues across the dial. The scanning direction is determined by the last end (UP or DOWN) you pressed on the manual tuning control, which, when used, steps by full channels (200 kHz on FM, 10 kHz on AM). All these tuning controls make for exemplary ease in finding listenable radio fare while you're driving. There also are six station presets, each of which can memorize one frequency from each radio band.

AM always represents the least impressive part of a car-stereo front end, and the CH-160's section is no exception. As in several other models we've tested, AM-band distortion in the very deep bass produces an apparent "hump" that doesn't represent true response and makes it impossible to characterize that portion of the response curve numerically. On the other hand, AM sensitivity is nearly as good as the best we've tested. We had difficulties measuring AM selectivity by our usual procedure, but the unit seemed to have typical selectivity performance. The AVC range also is average. Actual pulling power of listenable stations didn't particularly impress us, however. In part, this was due to the CH-160's steep low-pass filtering on AM signals, which minimizes high-frequency reception noise but tends to make stations sound tubby and dull; poor reception conditions during the test period may also have contributed to our impression.

The FM response is astonishingly flat. It would be remarkable even in a home receiver. (Our data show the stereo response; in mono it is down $\frac{1}{2}$ dB at 15 kHz, instead of less than $\frac{1}{4}$ dB. But that's still spectacular, and besides, few FM stations broadcast in mono these days, even if they play mono program material.) At the same time, sensitivity and selectivity were excellent. We were also pleasantly surprised at the CH-160's behavior in our weak-signal/high-multipath test, where it exhibited hardly any of the "spitting" (bursts of noise and dis-



BASS CONTROL	±9 1/4 dB at 100 Hz		
TREBLE CONTROL	+ 10 1/4, -10 1/2 dB at 10 kHz		
LINE OUTPUT IMPEDANCE	500 ohms		
MAXIMUM LINE OUTPUT L	EVEL		
from FM (100% modulation) 0.675 volt		
from tape (DIN 0 dB)	0.80 volt		

tortion) we're used to. Not surprisingly, overall FM sound quality struck us as clearer than average, with good high-end sparkle.

The stereo sensitivity figure shown in our data is altogether legitimate (which, as we've pointed out in the past, isn't always the case), because a healthy $17\frac{1}{2}$ dB of channel separation is still maintained at the sensitivity-measurement point. As signal strength drops from this point ($39\frac{1}{2}$ dBf), separation decreases rapidly. The resulting noise cancellation brings quieting back below 50 dB between about 19 and 29 dBf, but because the separation is less than 5 dB in this range (and less than 1 dB at the bottom of it), it doesn't really qualify as stereo, so the rating point stands. To keep noise low once the channels are fully blended, Harman Kardon has elected to attenuate output sharply with falling FM signal strength. In the multipath test, this caused rapid volume fluctuations, which imposed a "lumpy" quality on the sound. But again, the unit is exceptionally quiet for these conditions (high multipath, very low signal strength).

Our first encounter with Harman Kardon car stereo encourages us to look forward to more. The CH-160 is easy to install (partly because of a plug-in power wiring harness, which includes connections to switch both a power antenna and your power amplifier) as well as generally easy to use. But best of all is its sound, which is well above average among the models we've tested.

SHERWOOD CRD-180 CAR RECEIVER/TAPE DECK

Dimensions: 6¾ by 2 inches (chassis front), 5 inches deep; escutcheon, 7½ by 2¾ inches; "nose," 4¼ by 2¾ inches; main shafts, 5⅓ to 5¾ inches o.c. Connections: unterminated wires for ignition, battery, and power-antenna/ booster-amp switching; spade lug for ground; unterminated wires for speaker leads; female pin jacks for preamp output; standard coaxial female for antenna input. Fuses: 2-amp in ignition line. Price: \$300. Warranty: "limited," one year parts and labor. Manufacturer: made in Korea for Sherwood Division of Inkel Corp., 13845 Artesia Blvd., Cerritos, Calif. 90701.



The relatively simple front panel of the Sherwood CRD-180 belies all its capabilities. They include Dolby B noise reduction and switchable "metal" (70microsecond) tape equalization, station scan and preset scan, a local/distant switch to adapt the threshold sensitivity of the station scan, and a clock display. In addition, it comes with an oversize faceplate that is scored on the back to make trimming easy if a smaller format would better fit your dash—the first adapting unit of this sort we've encountered. And the wiring harnesses, for

both the power/ground and speaker connections, are fitted with connectors so that harness and chassis can be installed separately and then plugged together when the dash is reassembled.

All these features operated from a simple front panel means that some controls must do multiple duty, and until you learn your way around, they can be a bit confusing. Least obvious, perhaps, is that a clockwise twist on the tuning knob switches the tape EQ. Most problematic, however, are the tone controls. Both bass and treble are adjusted at a single

FM TUNER SECTION





Finally, car audio as good as your car.

Very tew companies selling car stereos are real audio companies. With 75 years of experience reproducing sound, Denon wishes to point out the level of their home audio technology present in the new DC-series of car audio equipment. For example, the only audio components—home or auto—offering the level of circuit sophistication found on the new Denon Car Audio DCA-3250 Power Amplifier are Denon's own top-of-the-line receiver and separates.

Similarly, the Dynamic Range Expansion circuitry found on Denon's new Car Audio DCR-7600 AM/FM Stereo Tuner/Cassette Deck otherwise can be found only on Denon's DE-70 Dynamic Equalizer.

The differences between Denon car and Denon home audio equipment will become apparent the moment you sit behind the wheel. To build car audio for people who love good sound as much as fine cars, Denon created a very limited, ultra-high quality range of car audio components, specifically engineered to become part of the automobile. Controls fall to hand and information is displayed with the driver dearly in mind.

For the car lover, Denon Car Audio does more than offer true auto high fidelity - it becomes an integral part of the thrill of driving. DENON

Denon America, Inc., 27 Law Drive, Fairfield, N.J. 07006 201-575-7810

ring. Simply turned, it is a bass control with a detented center position. But when you push the ring in while turning it, the treble is adjusted instead, but without a center detent. Similarly, you push the balance ring to adjust the front/rear fader; there is a detent here, though it's barely perceptible when you're pushing on the ring (at least with our test sample).

Adjusting the TREBLE away from the center of its range also rotates the BASS detent. This means that when you readjust the BASS to its detent, the calibration line on the tone-control ring will show you whether the TREBLE has been moved away from its center, but there is no definitively "flat" setting. Diversified Science Laboratories therefore set the treble control for equal output at 1 kHz and 10 kHz through the tuner and used this position as "flat" for the remainder of the lab tests. Since this allowed considerably more cutting than boosting of the treble, it may not have been the median setting that the CRD-180's designers had in mind, but we found no better way of calibrating the response measurements.

In any case, FM frequency response is very good, as is separation at full quieting, though (as the quieting graph demonstrates) channel blending begins at relatively high antenna-input levels. The process is gradual as the signal strength weakens, thus minimizing the possibility that the stereo image will collapse and expand rapidly under "picket fencing" conditions-a sonic phenomenon that, with some other equipment, can occasionally be downright alarming. By the time the signal strength falls to 44 dBf (the stereo-sensitivity rating point), separation has been reduced to 71/2 dB-just barely stereo.

The tuner is well behaved when faced with weak, fluctuating signals and strong, fluctuating multipath. Bursts of noise and distortion cause some "spitting," but it is rather muffled and therefore distinctly less obtrusive than in many other models. The LOCAL option attenuates the antenna input by 26 dB, meaning that it is useful only for very powerful stations, since the measured sensitivity is just average (as is the capture ratio).

The CRD-180's AM section will de-

code C-Quam (Motorola) broadcasts, the stereo AM format that seems to be emerging as the most popular. Sherwood thoughtfully supplies a list of stations that employ the C-Quam system. Unfortunately, none was receivable in our test area with a signal clear enough for useful judgment of the stereo quality. Mono AM performance is typical for a car stereo unit.

Tuning steps on both bands are one channel wide (200 kHz on FM, 10 kHz on AM), so you can't end up between channels. If you don't want to end up between stations, either, there are scan-tuning functions and six AM and six FM presets.

The cassette deck shows signs of azimuth disagreement with the BASF test tape in the forward direction of tape travel, but not in the reverse. The reason the forward response looks so flat in the graph is that a peak in the tape-playback equalization compensates for the azimuth disparity. This peak is visible (and audible) in the reverse direction. But because the remainder of the curve is very flat, overall sound is good. Drive-speed accuracy (which is seldom, if ever, a problem these days) is closer to spot-on than that of many home decks. The flutter figures are less impressive, though flutter itself was inaudible. We did get some audible pitch waver from heavy road shocks, but recovery was fast.

The CRD-180's preamp/amp design allows it to be used as a self-contained system, driving a front speaker pair, to which a separate amplifier and back speaker pair can be added easily. In this configuration, the preamp outputs are controlled by the front/rear fader, and the power-antenna lead can also be used to switch on the outboard amp. (The owner's manual shows a wiring layout for adding the Sherwood SCA-240 amplifier.) Power generated by the built-in amp is, at approximately 5 watts (7 dBW) per side, about as much as you can expect from a 12-volt supply without additional circuitry or a bridged output configuration, which would complicate the wiring somewhat.

All in all, the CRD-180 is easy to install, easy to upgrade (by the addition of an external power amplifier), and easy to use. Its moderate price makes it easy to own as well.

FM SENSITIVITY & QUIETING



stereo quieting (i	naise) & autp	ut
mano quieting (n		it
channel separatio		
Steres sensitivity (for 50-dl		
44 dBf, with 7 1/2 d Mana sensitivity (for 50-dB		
	noise suppre	26 3/4 dBf
Stereo S/N ratio (at 65 dBf)	63 1/4 dB
Mone S/N ratio (at 65 d8f)		67 dB
CAPTURE RATIO		2 3/4 dB
SELECTIVITY (alternate-cha	nnel)	65 dB
AM SUPPRESSION		45 dB
DISTORTION (THD+N)		
	stereo	mono
at 100 Hz	1.48%	0.62%
at 1 kHz	0.85%	0.46%
at 6 kHz	0.94%	0.26%
AM TUNER SECTION		
FREQUENCY RESPONSE		
DB CRD 180 (31	TTT	1
0		
- 10		X
HZ 20 50 100 200	500 1K 2	K 5K 10K
	+ 1/2, -3 dB,	110 Hz to 3.5 kH
SENSITIVITY		6.1 µ.V
SELECTIVITY		22 1/2 dB
AVC RANGE		57 dB
CASSETTE TRANSPO		
FREQUENCY RESPONSE	UNI SECT	
0 CRD 180 (4)	+ + +	
-5		
HZ 20 50 100 200	500 1K 2	K 5K 10K
forward		≈55 Hz to 13 kl
reverse		≈ 55 Hz to 15.5
WOW & FLUTTER	± ≤ 0.28% av	/g.; ± ≤ 0 36% p
SPEEN ACCURACY (10.8 to	14.4 volts)	
forward direction		0.3% fast
reverse direction		0.2% slow
PREAMP/AMPLIFIEF	R SECTION	1
BASS CONTROL	+ 10 1/2, -13	
TREBLE CONTROL	+4 1/2, -13	1/4 dB at 10 kHz
LINE CUTPUT IMPEDANCE		6.000 ohms
MAXIMUM LINE OUTPUT LE		
	•	1.4 volts
from FM (100% modulation)		1 25
from FM (100% modulation) from tape (DIN 0 dB) DUTPUT (per channel into 4		1.25 volts

MEDLEY

The Fela in Masekela

The Forum, a North London theater-turned-dance-hall/ beer-palace, is packed to capacity this midweek night. For hours, 2,000-plus white and black Anglos and transplanted Africans have churned and bounced through two opening acts and tapes of new African bands, and their dancing grows even more agitated Edited by Georgia Christgau and Ted Libbey

with the arrival of headliner Hugh Masekela. The crowd loves the trumpet player's single, "Lady" [from the LP *Waiting for the Rain*, Jive Africa JL 8-8382]. Written in the early Seventies by Nigerian saxman, bandleader, and nightclub owner Fela Anikulapo Kuti, the song puts down African women who imitate Western ways. Masekela's rendering tonight is especially potent;

his introduction sends a wave of sympathy washing over the room because Fela has been in Lagos's Kiri Kiri prison since November, convicted of attempting to smuggle \pounds 1,500 out of Nigeria.

Fela is innocent, his supporters claim, and they charge the military government with manufacturing evidence in order to rid itself of an irritant. He has

Feast and Famine: Writing on the Wall, Part 2

Some thoughts, occasioned by our annual preview of forthcoming LPs (see September's "800 Upcoming Recordings") and Compact Discs, on what is, and is not, being recorded:

In the race to grab the best-selling shares of the classical CD market, the major labels have fallen all over each other trying to offer the same thing to the consumer. As I mentioned in last month's "Medley," the worst example is the glut of newly recorded Beethoven piano concerto cycles: Telarc (Serkin/Ozawa), Philips (Brendel/Levine), Deutsche Grammophon (Pollini/Böhm/Jochum), and London (Ashkenazy/Mehta) are already in the lists, while Pro Arte (Sherman/Neumann), CBS (Perahia/Haitink), RCA (Ax/Previn), London again (De Larrocha/Chailly), and Philips again (Arrau/Colin Davis) are nearing completion or are in the works. (This does

not include Anton Kuerti's cycle from CBC, which can be purchased through André Perrault.) That makes a total of nine complete Beethoven piano concerto cycles scheduled to be available soon on Compact Disc.

You want Mahler symphonies? CBS (Maazel/Vienna Philharmonic), DG (Karajan/ Berlin Philharmonic), DG again (Abbado/Chicago Symphony/Vienna Philharmonic), DG yet again (Sinopoli/Philharmonia), Angel (Tennstedt/ London Philharmonic), London (Solti/Chicago Symphony), Pro Arte (Neumann/Czech Philharmonic), and RCA (Levine/Chicago Symphony/Philadelphia Orchestra/London Symphony) all have partial or complete cycles planned or now in the catalog. To get an integral Brahms cycle on Compact Disc, however, you have only one choice: Leonard Bernstein and the Vienna Philharmonic on Deutsche Grammophon. (Sony has remastered Bruno Walter's classic accounts of the Brahms symphonies with the Columbia Symphony Orchestra and George Szell's cycle with the Cleveland Orchestra, but neither is yet available from CBS-although the Walter is slated for release this fall, and both have been imported on the gray market. So far, only half of the German Harmonia Mundi cycle with Günter Wand and the Hamburg NDR Symphony has been issued on Compact Disc by Pro Arte. Fortunately, all three of these cycles will make worthy additions to the catalog.)

There are now four Ring cycles available on Compact Disc, but the rest of Wagner's oeuvre, to say nothing of the rest of the entire operatic repertory, is not yet so well served. Many gaps need to be filled, and a great many outstanding recordings of the past decade-one thinks, for instance, of the Janáček opera series conducted by Sir Charles Mackerras on London-should be brought into the lists even if they promise only limited sales.

Ted Libbey

been a special target because of his popularity as a political artist (he's carrying on a family tradition of opposing colonialism) and because of his own goals. In the mid-Seventies he organized the Young African Pioneers, and in 1981 released Black-President, boldly stating his own power aspirations/fantasies. Fela is a gadfly rather than a threat. but he has made a lot of enemies. His sentence, a fiveyear imprisonment from which there is no legal right of appeal, has attracted the attention and commitment of Amnesty International, among other sympathizers, to correct.

Masekela, like many jazz musicians, avoids direct political confrontation, even though he voluntarily exiled himself from South Africa's apartheid in 1959. But his own compositions frequently are topical. At the Forum concert, "Coal Train (Stimela)," a song about conscripted South Africans and work camps in the coal mines, draws cheers and an immediate and spontaneous singalong. Masekela's admiration for Fela's brave stance has spurred his own activism.

Fela's lyrics would seem to be at odds with his music's embrace of Western sounds—just one of the paradoxes of the new Africa. Masekeia's spirited "Lady" is a sobering reminder that the old Africa is still very much with us.

Leslie Berman

COMPACT DISC PREVIEW

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A look at the new season's releases

ANGEL

- Beethoven: Symphonies Nos. 1, 7. Philharmonia O, Klemperer.
- Beethoven: Symphonies Nos. 2, 4. Philharmonia O, Klemperer.
- Beethoven: Symphony No. 3; Grosse Fuge. Philharmonia O, Klemperer.
- Beethoven: Symphonies Nos. 5, 8. Philharmonia O, Klemperer.
- Beethoven: Symphony No. 6; Overtures to Egmont, The Creatures of Prometheus. Philharmonia O, Klemperer.
- Beethoven: Symphony No. 9. Philharmonia O, Klemperer.
- Beethoven: Overtures. Philharmonia O, Klemperer.
- Brahms: Violin Sonatas. Perlman, Ashkenazy (d).
- Respighi: Pines of Rome; Fountains of Rome. Philadelphia O, Muti (d).
- Vivaldi: The Four Seasons. Perlman; Israel P (d).
- Wagner: Tannhäuser. König, Popp, Meier, Weikl, Moll, Jerusalem; Bavarian RSO&Ch, Haitink (d).
- The Art of Beverly Sills, Vol. 2.

Angel Records, 1750 N.Vine St., Hollywood Calif. 90028

ARCHIV

C

- (released by Deutsche Grammophon)
- Bach: Partitas (6). Pinnock (2).
- Handel: Alexander's Feast; Oboe Concertos (3); Sonata à 5. English Concert, Pinnock (d).
- Mozart: Piano Concertos Nos. 18, 19. Bilson; English Baroque Soloists, Gardiner (d).
- Trevor Pinnock and the English Concert: Works by Handel, Avison, Pachelbel, Haydn, Vivaldi, Albinoni, and Purcell (d).

ARIOLA/EURODISC (distributed by RCA)

- Beethoven: Fidelio. Altmeyer, Adam; Leipzig Gewandhaus O, Masur.
- Leoncavallo: Pagliacci. Popp, Atlantov, Brendel; Gardelli.
- Verdi: *Rigoletto*. Takács, Weikl, Popp, Aragall; Gardelli.

ARION

- (distributed by Delos International) Hindemith: The Four Temperaments; Nobi-
- lissima Visione. Rosenberger; Royal PO, DePriest.
- David Britton-Baroque Organ Toccatas by Bach, Buxtehude, Krebs, Oley.
- Folger Consort—A Distant Mirror/Shakespeare Music.
- Celedonio Romero—An Evening of Guitar Music—Works by Bach, Giuliani, Sor, Sanz.
- Eugene Rousseau—The Golden Saxophone—Music of Bach, Debussy, Feld, Gershwin, Heiden, Orrego-Salas, Villa-Lobos.

BELLAPHON

(distributed by Delos International)

The next volumes in the series of complete organ works of Buxtehude will be released in 1985/86 with Wolfgang Rubsam playing a variety of Europe's famous instruments.

THE COMPACT DISC has come into its own, as growing numbers of classical music listeners will attest. For those who have invested in the medium, and those who are thinking of doing so, we present our annual listing of releases planned by more than 40 companies for the forthcoming year.

Please note the following use of abbreviations, alone or in combination. For performing forces: P (Philharmonic), R (Radio), S (Symphony), O (Orchestra), C (Chamber), Ch (Choir, Chorus), St (State), Op (Opera), Ac (Academy), E (Ensemble), Qr (Quartet), Qn (Quintet), Fest (Festival), or their foreign-language equivalents. For production and packaging: Where known, number of CDs in multidisc sets is given in parentheses at end of listing; other parenthetical symbols include h (historical), d (digital original), m (mono), l (live recording). Initials and first names appear only as needed.



Vagner, Schubert from Norman

BIS

(distributed by Qualiton Imports)

- Almila; Danielson; Grieg; Hallberg; Holmboe; Madsen: Instrumental Works. Scandinavian Brass E, Panula.
- Barber; Jolivet; Hindemith; Saeverud: Wind Quintets. Bergen Wind Qn.
- Mozart: Concert Arias. Gohman; Kalmar Läns CO, Wedin.
- Sibelius: Historical Scenes, I, II; En Saga. Gothenburg SO, Järvi.
- Sibelius: Kullervo; The Origin of the Fire. Tiilikainen; Gothenburg SO, Järvi.
- Sibelius: Lemminkäinen Suite. Gothenburg SO, Järvi.
- Sibelius: Orchestral Works. Gothenburg SO, Järvi.
- Stravinsky: Danses concertantes. Avanti O, Saraste
- Tubin: Prelude solennel; Suite on Estonian Dances; Violin Concerto No. 1. Lubotsky; Gothenburg SO, Järvi.
- Tubin: Requiem. Lunds Studentsångare, Järvi.
- Verdi: Rigoletto. Gedda, Ehrling (2, h).
- Vivaldi: The Four Seasons. Sparf; Drottningholm Baroque E.
- English Consort Music: Music for Recorder Quintet. Musica Dolce.
- German and Spanish Songs. Högman, Lindberg.
- Jacob Lindberg: German Lute Music.
- The Romantic Trombone. Lindberg, Pöntinen.

BRIDGE

- Crumb: Apparition. Ives: Songs. De Gae-tani, Kalish.
- Crumb: A Little Suite for Christmas. Wernick: Sonata. Orkis.
- New Music with Guitar: Works by Henze, Carter, Takemitsu, Del Tredici, Kolb, Bland, Lennon. Starobin.
- Bridge Records, GPO Box 1864, New York. N. Y. 10116.

CAPRICCIO

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- Beethoven: Symphony No. 9. Wiens, Walther, Goldberg, Stryczek; Dresden StOpCh, Staatskapelle Dresden, Blomstedt (d).
- Dvořák: Gypsy Songs; Love Songs; Sacred Songs. Schreier (d).
- Handel: Concerti grossi, Op. 6 (12). Neues Bachisches Collegium Musicum, Pommer (3).

- Kreutzer; Lortzing; Mozart; Wagner: Arias. Prey; Bratislava PO&Ch, Woess
- Schumann: Symphony No. 1; Manfred Overture; Overture, Scherzo, and Finale. Stuttgart RSO, Marriner (d).
- Schutz: Schwanengesang; Psalmen 119, 110; Deutsches Magnificat. Berliner Solisten, Capella Sagittariana, Knothe.
- Schütz: Symphoniae Sacrae, Part I (S.W.V. 257-276). Schreier, Marshall, Wagner, Ginzel, Stier, Lepetit, Schmidt, Polster; Dresden Kreuzchor, Capella Fidicinia, Grüss (d).
- Weber: Overtures to Oberon, Preciosa, Abu Hassan, Euryanthe, Beherrscher der Geister, Der Freischütz. Staatskapelle Dresden, Kühn (d).
- Reiner Goldberg-Heldentenor Arias from works of Beethoven, Wagner, Weber. Staatskapelle Berlin, Kurz (d).
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- Neues Bachisches Collegium Musicum Leipzig—Pachelbel Kanon: Works by Bach, Handel, Telemann, Haydn, Charpentier, Pachelbel (d).

CBS MASTERWORKS

- Bach: Various Works. Paris Saxophone Qr (d).
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- Beethoven: Sonatas for Piano and Violin, Vol. 1 (Nos. 1-3, Op. 12; No. 4, Op. 23; No. 9, Op. 47). Istomin, Stern (2, d).
- Beethoven: Violin Concerto. Francescatti; Columbia SO, Walter.

Brahms: Alto Rhapsody; Song of Destiny. Mahler: Lieder eines fahrenden Gesel-len. Miller; Columbia SO, Walter.

Brahms: Double Concerto. Schumann: Piano Concerto". Francescatti, Fournier, Istomin*; Columbia SO, Walter.

- Brahms: Symphony No. 1. Columbia SO, Walter.
- Brahms: Symphony No. 2. Columbia SO, Walter.
- Brahms: Symphony No. 3. Columbia SO, Walter Brahms: Symphony No. 4. Columbia SO,
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- Bruckner: Symphony No. 3. Kubelik. Bruckner: Symphony No. 4. Columbia SO, Walter.
- Bruckner: Symphony No. 7. Wagner: Siegfried Idyll. Columbia SO, Walter (2).
- Bruckner: Symphony No. 9. Columbia SO, Walter.
- Chopin: Impromptus. Perahia.
- Donizetti: L'Elisir d'amore (highlights). Cotrubas, Domingo; Royal Op House, Covent Garden, Pritchard,
- Dvořák: Slavonic Dances, Op. 46. Philharmonia O, A. Davis (d).
- Dvořák: Symphony No. 8. Wagner: Prelude

and Good Friday Spell from Parsifal. Columbia SO, Walter.

- Dvořák: Symphony No. 9. Columbia SO, Walter.
- Glass: Einstein on the Beach (3).
- Glass: Satyagraha (3).
- Handel: Messiah. Mormon Tabernacle Ch.
- Havdn: Cello Concertos. Ma.
- Haydn: Concertos for Flute, Oboe. Rampal,
- Pierlot; Franz Liszt CO, Rampal (2). Haydn: Symphonies Nos. 88, 100. Columbia SO, Walter.
- Mahler: Das Lied von der Erde. Haefliger, Miller; New York P, Walter.
- Mahler: Symphony No. 1. Columbia SO, Walter.
- Mahler: Symphony No. 2. Columbia SO, Walter.
- Mozart: Divertimentos. Ma.
- Mozart: Don Giovanni. Raimondi, Van Dam, Berganza, Te Kanawa; Paris Op, Maazel (3).
- Mozart: Eine kleine Nachtmusik; Overtures; Masonic Funeral Music. Columbia SO, Walter.
- Mozart: Serenades for Winds. E Wien Berlin.
- Mozart: Sonata in D. Schubert: Fantasy in F minor. Perahia, Lupu (d).
- Mozart: Symphonies Nos. 35, 39. Columbia SO, Walter.
- Mozart: Symphonies Nos. 36, 38. Columbia SO, Walter.
- Mozart: Symphonies Nos. 40, 41. Columbia SO, Walter.
- Mozart: Violin Concertos Nos. 3, 4. Francescatti; Columbia SO, Walter.
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- Ravel: Songs. Norman, Van Dam, Gomez; E Intercontemporain, BBC SO, Boulez.
- Rossini: Il Barbiere di Siviglia. Horne, Nucci, Ramey, Dara; La Scala, Chailly.
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- Schubert: Symphonies Nos. 5, 8*. Columbia SO; New York P*, Walter.
 Schubert: Symphony No. 9. Columbia SO,
- Walter.
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- Beethoven: Symphony No. 3. Vienna P, C. Kleiber.
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- Apollo. Detroit SO, Doráti (d). Couperin: Messe à l'usage ordinaire des
- Paroisses. Hurford (d). Couperin: Messe propre pour les Couvents.
- Hurford (d).
- Delibes: Coppelia. National PO, Bonynge (2, d)
- Donizetti: L'Elisir d'amore. Sutherland, Pavarotti; Bonynge (2).
- Dvořák: Symphony No. 8; Scherzo capri-ccioso. Cleveland O, Dohnányi (d).
- Dvořak: Symphony No. 9. Cleveland O, Dohnányi (d).
- Fauré; Lalo; Saint-Saëns: Works for Cello and Orchestra. Harrell; Berlin RSO, Chailly (d).



A Furtwangler five-pack

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- Handel: Music for the Royal Fireworks; Water Music. St. Martin's Ac, Marriner.
- Handel: Organ Concertos, Op. 4. Hurford; Amsterdam CO, Rifkin (d).
- Haydn: Cello Concertos. Coin; Ac of Ancient Music, Hogwood.
- Holst: The Planets. London PO, Solti.
- Janáček: The Cunning Little Vixen (suite). Mackerras (d).
- Liszt: Années de pèlerinage: Third Year. Bolet (d).
- Liszt: Transcendental Etudes. Bolet (2, d).
- Mahler: Kindertotenlieder; Lieder eines fahrenden Gesellen. Ferrier.
- Mascagnic Cavalleria rusticana. Leoncaval-Io: Pagliacci^{*}. Pavarotti, Varady, Freni; National PO, Gavazenni, Patane^{*} (3).
- Mendelssohn: Organ Works. Hurford. Mozart: Piano Concertos Nos. 8, 9. Ashke-
- nazy; Philharmonia O (d).
- Mozart: Piano Concertos Nos. 17, 18. Schiff; Camerata Academica, Vegh.
- Mozart: Piano Concertos Nos. 18, 20. Ashkenazy; Philharmonia O (d).
- Mozart: Piano Concerto No. 22; Rondo, K. 382. Ashkenazy; Philharmonia O.
- Mozart: Piano Concertos Nos. 24, 26. De Larrocha; CO of Europe, Solti (d).
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- Mussorgsky: Pictures at an Exhibition (original for piano; version orchestrated by Ashkenazy). Ashkenazy; Philharmonia O.
- Puccini: La Bohème. Tebaldi, Bergonzi; Serafin (2).
- Puccini: Madama Butterfly. Tebaldi, Bergonzi; Serafin (2).
- Puccini: Tosca. Te Kanawa, Aragall, Nucci; Solti (2, d)
- Rachmaninoff: The Bells; Three Russian Songs. Troitskaya, Karczykowski; Concertgebouw O, Ashkenazy (d).
- Rachmaninoff: Cello Sonata; Works for Cello and Piano. Harrell, Ashkenazy (d).
- Rachmaninoff: Piano Concertos Nos. 2, 4. Ashkenazy; Concertgebouw O, Haitink (d)

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Rachmaninoff: Preludes. Ashkenazy (2).

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Gardiner conducts Mozart.

- Respighi: Pines of Rome; Fountains of Rome. Suisse Romande O, Ansermet.
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- Saint-Saëns: Orchestral Works. Philharmonia O. Dutoit.
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- Stravinsky: Symphony No. 1; Scherzo fan-tastique. Detroit SO, Doráti (d).
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- Verdi: Un ballo in maschera. M. Price, Pavarotti, Ludwig, Battle; National PO, Solti (3, d).
- Verdi: Nabucco. Suliotis, Gobbi.
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- Wagner: The Flying Dutchman. Martin,
- Kollo, Bailey; Solti (3). Wagner: Music Arranged for Brass Ensemble. Philip Jones Brass E. (d).
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- Mozart: Symphonies Nos. 25, 26, 27. Ac of Ancient Music, Hogwood (r).
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- Bach: The Cantatas, Vol. 2. Concentus Musicus, Harnoncourt; Leonhardt Consort, Leonhardt
- Bach: The Cantatas, Vol. 3. Concentus Musicus, Harnoncourt; Leonhardt Consort, Leonhardt
- Bach: The Cantatas, Vol. 4. Leonhardt Consort, Leonhardt.
- Bach: The Cantatas, Vol. 5. Concentus Musicus. Harnoncourt.
- Bach: The Cantatas, Vol. 6. Concentus Musicus, Harnoncourt; Leonhardt Consort, Leonhardt.
- Bach: The Cantatas, Vol. 7. Concentus Musicus, Harnoncourt.
- Bach: The Cantatas, Vol. 8. Concentus Musicus, Harnoncourt.
- Bach: The Cantatas, Vol. 36 (Nos. 147-151). Concentus Musicus, Harnoncourt; Leonhardt Consort, Leonhardt,
- Bach: The Cantatas, Vol. 37 (Nos. 152-156). Concentus Musicus, Harnoncourt (d).
- Bach: Greatest Organ Works, Vol. 2. Tachezi (d).
- Bach: Keyboard Concertos. Leonhardt.
- Bach: St. John Passion. Harnoncourt.
- Bach: St. Matthew Passion. Equiluz, Holl, Augér, Greenawald, Langridge; Concertgebouw O, Harnoncourt (3, d, l).
- Beethoven: Mass in C. Gewandhaus O
- Beethoven: Piano Sonata, Op. 81a. Buchbinder.
- Beethoven: String Quartet, Op. 127. Vermeer Qr (d).
- Beethoven: Symphony No. 7; Overture to Egmont. Berlin P, Keilberth (h).
- Beethoven: Trios: Op. 1, No. 3; Op. 11. Haydn Tr (d).
- Brahms: Symphony No. 1. Berlin P, Keilberth (h). Bruckner: Symphony No. 6. Berlin P, Keil-
- berth (h). Handel: Belshazzar. Concentus Musicus,
- Harnoncourt.



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Haydn, J.: Piano Concertos. Entremont; Vienna CO.

- Haydn, M.: Four Unpublished Symphonies from the Collection of the National Library, Budapest. Franz Liszt CO (d).
- Humperdinck: Hänsel und Gretel. Schreier, Adam; Staatskapelle Dresden, Suitner. Liszt: Piano Works. Katsaris.
- Monteverdi: L'Incoronazione di Poppea. Concentus Musicus, Harnoncourt.
- Mozart: Clarinet Quintets. Klöcker, Eder Qr.
- Mozart: Flute Concertos Nos. 1, 2; Andante for Flute and Orchestra. Schulz; Mozarteum O, Hagen.
- Mozart: Mass in C minor, K. 427. Lake, Denes, Equiluz, Holl; Vienna StOpCh, Concentus Musicus, Harnoncourt (d).
- Mozart: Prussian Quartets (2). Alban Berg Qr.
- Mozart: Serenades, K. 375, 388. Vienna Mozart Winds, Harnoncourt (d).
- Mozart: Symphonies Nos. 32, 36; Lucio Silla Overture. Concertgebouw O, Harnoncourt (d).
- Schubert: Symphony No. 8; Music from Rosamunde. Vienna S, Harnoncourt (d).
- Telemann: Orchestral Suites, Vol. 1; Double Concertos. Concentus Musicus, Har-
- noncourt.

Christmas. Harnoncourt (d).

Classical Works for Cello and String Bass. Baumann, Stoll (d).

THE FOLLOWING LISTINGS were inadvertently omitted from our September issue's preview of forthcoming LP and cassette recordings. We include them here, with apologies to the labels.

CENTREDISCS

- Evangelista: Clos de vie. Gougeon: Voix intimes. Rea: Treppenmusik. Vivier: Pour violon et clarinet. Société de Musique Contemporaine du Québec, Garant.
- Somers: Kyrie*; Limerickst. Roslak*, Kearnt; Elmer Iseler Singers.
- Somers: Louis Reil. Roslak, Loeb, Turgeon, Rutherford; Canadian O Company; National Arts Center O, Feldbrill (d, h, l).
- Toronto Children's Chorus: Works by Schafer, Beckwith, Charpentier, Bissell, Kasemets, Cable, Healy. Bartle. Jon Vickers, tenor, Richard Woitach, pi-
- Jon Vickers, tenor, Richard Woitach, piano: Works by Coulthard, Morawetz, Duncan, Somers.
- Canadian Music Centre, 20 St. Joseph St., Toronto, Ont., M4Y 1J9, Canada.

CP²

- Schnabel: Sonata for Violin (premiere). Zukofsky.
- Cage: Sixteen Dances (premiere). Nexus Percussion E, Zukofsky.
- Musical Observations, Inc., 45 W. 60th St., Apt. 3K, New York, N.Y. 10023.

Spielmusik of the 17th Century. Musicalische Compagney (d).

TITANIC

- Bach: The Art of the Fugue. Bagger. Haydn: Symphonies Nos. 35, 47, 65. Monad-
- nock Music Fest O. Purcell: Songs. Armstrong.
- Soler: Concertos for Two Keyboards (6). Elizondo-Iriarte, Brauchli.
- Anner Bylsma, Cellist: Works by Degli, Antoni and Others.
- New York Cornet and Sacbut Ensemble: Venetian Brass Music 1500-1600.
- The Organ of Labastida Spain: Works by Basque composers. Elizondo-Iriarte.
- Titanic Records, Box 204, Sommerville, Mass. 02144.

UNICORN-KANCHANA

(distributed by Harmonia Mundi, U.S.A.)

- Holst: Rig Veda Hymns; Two Eastern Pictures. Royal College of Music Ch, Royal PO, Willcocks.
- Tiomkin: Suites. Royal College of Music Ch, Royal PO, Willcocks.

VANGUARD

Boccherini: Works for Guitar and Strings. Schneider, Galimir, Tree, Soyer, Harrell, Diaz.

ORION

- Beerman: Concerto for Saxophone and Taped Instruments. Shrude: Shadows and Dawning; Evolution V. Sampen, et al.
- Brahms: Haydn Variations. Debussy: Fêtes. Ravel: Ma Mère l'Öye. H. and A. Kanwischer.
- Foote: Suite in D. Harris: Sonata (1928); American Ballads. Corbató.
- Glazunov: Quintet in B flat, Op. 109. Pierné: Introduction and Variations. Désenclos: Quintet. Gari Saxophone Qn.
- Kaufman: Sonata for Violin and Piano No. 1; Interiors for Violin and Piano; Concerto for Violin and String Orchestra. Malan, et al.
- Walker: Sonata for Violin and Piano No. 2; Five Fancies for Clarinet and Piano, Four Hands; Lyric for Strings; Piano Pieces (3). Walker.
- Barbro Dahlman, piano: Three Generations of Swedish Composers (Works by Larsson, Eklund, Grahn.)
- Juliana Osinchuk, piano: Ukrainian Piano Music (Works by Bortniansky, Rerucky, Shtoharenko, Kosenko).

CASSETTE ISSUES

- Bach (arr. Vivaldi): Concerto in A. Bach: Fantasy and Fugue in G, B.W.V. 650. Schübler: Chorales. Schumann: Six Pieces. Nyquist (Schantz organ).
- Pieces. Nyquist (Schantz organ). Berg: Sonata, Op. 1. Debussy: Préludes (3). Ginastera: Sonata No. 1. Wyngaard.
- Colgrass: The Earth's a Baked Apple. Floyd: Pilgrimage. Hovhaness: Fra Angelico. Rorem: Lions. Treigle; New Orleans P,

Canteloube: Songs of the Auvergne, Vol. 1. Davrath; de la Roche.

- Dvořák: Piano Quintet. Schneider, Galimir, Tree, Soyer, P. Serkin.
- Handel: Messiah (highlights). M. Price, Minton, Young, Diaz; Amor Artis Ch, English CO, Somary.
- Liszt: Hungarian Rhapsodies. Brendel.
- Mozart: Piano Concertos Nos. 9, 14. Brendel; Solisti di Zagreb, Janigro.
- Mozart: Piano Quartets, K. 478, 493. P. Serkin, Schneider, Tree, Soyer.
- P.D.Q. Bach: Iphigenia in Brooklyn; Concerto for Horn and Hardart; Quodlibet; Sinfonia Concertante. Mester.
- Schubert: Trout Quintet; Sonata for Violin and Piano, Op. 137, No. 1. P. Serkin, Schneider, Tree, Soyer, Levine.
- Schubert: Works for Piano. Brendel.
- Stravinsky: L'Histoire du soldat. Milhaud, Singher, Aumont; Stokowski.
- Thomson: Suite from The River; Suite from The Plow That Broke the Plains. S of the Air, Stokowski.
- The Art of Alfred Deller.
- Bonbons aus Wien: Music of Lanner, Mozart, Schubert, Strauss. Boskovsky.
- Mischa Elman Plays Kreisler Favorites.

Vanguard Recording Society, 71 W. 23rd St., New York, N. Y. 10010.

Torkanowsky (r).

- D'Indy: Sonata in C, Op. 59. Lalo: Sonata in D, Op. 12. Temianka, Domingues (r).
- MacDowell: Sonata tragica. Bloch: Poems of the Sea; Sketches in Sepia. Corbató (r).
- Ornstein: Danse sauvage; Early Piano Works. Sellers (r).
- Rachmaninoff: Chopin Variations, Op. 22. Prokofiev: Three Pieces, Op. 96. Kabalevsky: Sonata No. 3, Op. 46. Muczynski: Suite for Piano, Op. 13. Drake (r).
- I Cellisti: Works by Casals, Linn, Erlich, Vivaldi-Varga (r).
- Orion Recordings, 5840 Busch Dr., Malibu, Calif. 90265.

SMITHSONIAN

- Virtuosi: Music of Bach, Beethoven, Bloch, Brahms, Chopin, Falla, Fauré, Kreisler, Mendelssohn, Mozart, Poulenc, Prokofiev, Schumann, Sibelius, and Weber in Historic Performances by Casals, Landowska, Szigeti, Beecham, Cortot, Schnabel, Sargent, Rubinstein, Menuhin, Enesco, Monteux, Lipatti, Feuermann, Stokowski, Piatigorsky, Solomon, Primrose, Kapell, Gieseking, Brain, Karajan, Serkin, Horowitz, Rachmaninoff, Kreisler, Heifetz, and others (7,h,m). (Available on 5 cassettes.)
- Smithsonian Institution Press, 955 L'Enfant Plaza, Rm. 2100, Washington, D.C. 20560.

A CD SAMPLER

Compact reviews

vs of

some recent

Compact Discs

by Robert E. Benson

Argerich Plays Tchaikovsky

Martha Argerich's brilliant performance of Tchaikovsky's Piano Concerto No. 1 with Charles Dutoit and the Royal Philharmonic is now coupled with her equally brilliant rendering of Prokofiev's Piano Concerto No. 3 with Claudio Abbado and the Berlin Philharmonic. These are analog recordings, dating from 1971 and 1967, respectively, but the sound is superb. Total playing time: 62:39. (Deutsche Grammophon 415 062-2.)



Solti/Chicago Prokofiev

Georg Solti and the Chicago Symphony can be heard on this spectacular Prokofiev CD containing the *Classical Symphony* as well as 17 excerpts from *Romeo* and *Juliet*. Both performances are extraordinary, and very well recorded. Total playing time: 59:57. (London 410 200-2.)

Canadian Brass

High, Bright, and Clear: The Glory of Baroque Brass is the title of an RCA collection that features the Canadian Brass playing works of Scheidt, Mouret, Bach, Purcell, Boyce, Reiche, and Clarke. Recorded in the Cathedral Church of St. James in Toronto, this disc wonderfully captures the rich, warm acoustics. Surely one of the finest CDs of its kind. Total playing time: 50:43. (RCA RCD 1-4575.)



Fritz Reiner, one of the leading exponents of the music of Richard Strauss, was less effective with the music of Johann and Josef, as this RCA compilation of waltzes, with one polka thrown in for good measure, makes evident. These are somewhat square readings, but they are sumptuously recorded—analog, of course, but with better sound than the majority of digital CDs currently on the market. Total playing time: 73:16. (RCA RCD 1-5405.)

Stravinsky from Dutoit/MSO

Considering the impact the Montreal Symphony and conductor Charles Dutoit have had on the audio world and the fact that they have made some truly outstanding recordings, I was surprised to find this one, of Stravinsky's Le Sacre du printemps, disappointing (London 414 202-2). This is a very Gallic view of the score, and the orchestra has difficulty playing the notes. London's engineering is rather veiled and unfocused: the label's earlier recording of the same work, with Antal Dorati and the Detroit Symphony, had superior sound. (Total playing time: 33:37; London 400 084-2.) Even though Stravinsky's Symphonies of Wind Instruments is also included on Dutoit's new recording, the total playing time is only 44:24. Of competing CD versions, perhaps the finest is Doráti's, closely followed by Lorin Maazel's, if you can take his elephantine approach and don't mind the limited playing time of 33:30. (Telarc CD 80054.)

Strauss, Weber Solo Horn

Hermann Baumann, an East German horn virtuoso, recently signed a recording contract with Philips. Accompanied by the Leipzig Gewandhaus Orchestra directed by Kurt Masur, he plays here the two Richard Strauss horn concertos and Weber's Concertino in E minor. These are relaxed accounts, totally accomplished, though recorded with murky, cavernous sonics that hardly do justice to the performance. Total playing time: 49:15. (Philips 412 237-2.)



Zubin Mehta's account of Puccini's Turandot-with the London Philharmonic, the John Alldis Choir, and an allstar cast headed by Joan Sutherland, Luciano Pavarotti, and Montserrat Caballé---is a welcome addition to the CD catalog. One of the finest recordings of the opera ever made, it offers vivid, wide-range sonics. London has thoughtfully issued it on two CDs, even though it required three LPs. (Someone at Polygram is thinking!) Forget Herbert von Karajan's Deutsche Grammophon recording, which has an inferior soprano and has been released on three CDs. Total playing time: 117:33. (London 414 274-2.)



Fritz Reiner's 1958 Chicago Symphony performance of Mussorgsky's Pictures at an Exhibition has been a showpiece for a quarter centuryand with good reason. The generous coupling with Reiner's 1960 releases of Respighi's Pines of Rome and Fountains of Rome on this CD is a somewhat dubious bonus, however. The transfer of these is atrocious, with an almost total lack of high frequencies and with a persistent low-frequency rumble. Too bad. Still, the CD is worth having just for *Pictures*. Total playing time: 69:28. (RCA RCD 1-5407.)

Vivaldi Lute Collection

Daniel Benko is lute soloist with the Franz Liszt Chamber Orchestra conducted by Janos Rolla in a collection of Vivaldi concertos and trios for lute and other instruments. Well played, but not so well recorded—very close up, without much space around the instruments. Total playing time: 46:04. (Hungaroton HCD 11978. Distributed by Qualiton Imports, 39-28 Crescent St., Long Island City, N.Y. 11101.)

"Zarathustra" from Solti

Georg Solti and the Chicago Symphony score high with this generous Richard Strauss coupling, offering not only Also Sprach Zarathustra, but Don Juan and Till Eulenspiegel as well. The latter two are extraordinary performances played with incredible virtuosity, the CD transfer quite superior to the LP counterpart. Zarathustra is fine once you get past the opening, with its oil-can timpani and electronic organ. Total playing time: 63:22. (London 414 043-2.)

Stravinsky Ballets by Muti

Riccardo Muti's Angel recording of Stravinsky's *Petrouchka* with the Philadelphia Orchestra offers a superb performance, indeed an orchestral *tour de force*. Issued on a single CD with a total playing time of only 33:24 (Angel CDC 47015), though, it is no bargain. Nor, for that matter, are other CDs that offer *Petrouchka* by itself. The Muti/Philadelphia account of

Stravinsky's Le Sacre du printemps is also available on a single CD (Angel CDC 47102), with a playing time of 34:30. Why didn't Angel issue both of them together on one CD? Wouldn't it be better (and more profitable, perhaps) to release a well-filled CD that would please the consumer? If you don't mind paying top dollar for this music. Muti's performances can be recommended. Or else try the Claudio Abbado/London Symphony version of Petrouchka on Deutsche Grammophon, Total playing time: 34:22. (Deutsche Grammophon 400 042-2.)

Marches from Solti et al

London has gathered together a group of marches of one kind or another-including

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works by Elgar, Prokofiev, Berlioz, Meyerbeer, Mendelssohn, Tchaikovsky, and Respighi, with conductors Georg Solti, Walter Weller, Richard Bonynge, Christoph von Dohnanyi, Antal Doráti, and Charles Dutoit-that is not quite as generous a selection as one might think. These are mostly analog recordings, with variable sound quality. but the best are very good indeed. Total playing time: 49:43. (London 411 954-2.)

Rossini Sonatas

Four of Rossini's sonatas for strings (Nos. 1, 4, 5, and 6) are available on a Teldec CD featuring the Franz Liszt Chamber Orchestra directed by Janos Rolla. Rossini's bright, captivating music is well played, though with no outstanding sparkle. The sound is not as well defined and pleasing as on some earlier analog recordings by the same group. Total playing time: 57:06. (Teldec CDT 43109. Distributed by Intersound, Inc.)

Ormandy's . Bartók

Eugene Ormandy and the Philadelphia Orchestra-with their "new" sound (according to the vintage 1979 recording notes)-play Bartok's Music for Strings, Percussion, and Celeste and the suite from The Miraculous Mandarin. The "new" sound was hardly an improvement over the best of their "old" recorded sound, particularly that achieved by Columbia before the Philadelphians switched to RCA years

ago. The famed strings here are a touch steely, the dry acoustics of the recording site not providing desirable warmth. Fine performances, as one might expect. Total playing time: 50:10. (Angel CDC 47117.)

(\bullet) **Michigan Band**

The University of Michigan Symphony Band, directed by H. Robert Reynolds, can be heard here in a collection of generally familiar marches. Many collectors are doubtless looking for a CD full of rousing marches to show off their equipment. This isn't it. Sonically it is one of the most disappointing CDs ever, with no high frequencies at all. Total playing time: 39:22. (Pro Arte CDD 007.)

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Craig Harris is the trombonist most suited to the intersection of tradition and experiment in today's jazz.

by Francis Davis

have to be careful of what I say in interviews," explains Craig Harris, "because I was once misinterpreted as saying that there were no interesting trombonists in the late '60s and early '70s, and that simply isn't true. That's an insult to many people I admire, including J.J. Johnson, Curtis Fuller, Jimmy Knepper, Grachan Moncur, and Roswell Rudd, not to mention the pioneers from the swing era who were still going strong. There were a lot of great trombonists; the problem was that, with the exception of Duke Ellington and Charles Mingus, nobody was spotlighting them-that's how I should have put it. There were two or three in each of the big bands in the old days, although you hardly ever saw a trombonist in a quartet or quintet unless it was led by one. But these things move in cycles, and now you have people like Henry Threadgill, David Murray, Muhal Richard Abrams, George Russell, Anthony Braxton, Charlie Haden, Carla Blev, and Abdullah Ibrahim (a.k.a. Dollar Brand) all forming larger groups and featuring the instrument again-which is why it seems like dozens of young trombonists like myself, George Lewis, Ray Anderson, Steve Turre, Joseph Bowie, Gary Valente, and Robin Eubanks are arriving on the scene all at once."

Harris makes it sound as though his growing reputation is no more than the result of being in the right place at the right time. In reality, it is difficult to separate cause from effect; it could just as logically be argued that the current bumper crop of versatile young

Francis Davis is writing a book of profiles of contemporary jazz musicians, to be published by Oxford University Press.



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trombonists encourages bandleaders to make room for the horn in their ensembles. However you choose to explain it, the old sackbut is suddenly on the upswing, and Harris's sense of historical connections-together with his penchant for harmonic layerings, polymetric long division, and rubato tone poems-makes him the trombonist most suited to a period in which traditionalism and experimentation regularly intersect and in which the most forward-looking jazz composers are also those most blessed with hindsight. He has been a dues-paying member of practically every important mid- to king-size band to convene in this decade, including the Henry Threadgill Sextet, the David Murray Octet and Big Band, Olu Dara's Okra Orchestra, Lester Bowie's Brass Fantasy, Jaki Byard's Apollo Stompers, Charlie Haden's New Liberation Music Orchestra. and short-lived leviathans led by Abrams, Cecil Taylor, Sam Rivers, and Ibrahim. Watching Harris cavort with any of these outfits (rather shy in person, he is quite the showboat once the music starts, given to fiery red jumpsuits, floor-length scarves, and pop-eyed expressions of exertion à la Louis Armstrong), it is easy to imagine him breezing into Harlem 50 years ago and throwing a scare into any of the triumvirate in the Duke Ellington Orchestra. As the mood seizes him, he can evoke Juan Tizol's cosmopolitan exotica, Lawrence Brown's romantic tumescence, or Tricky Sam Nanton's gutbucket ribaldry and winking sleight of hand. He delights in mouthing the off-color notes that two generations of tight-lipped bop trombonists almost succeeded in expunging from the horn's vocabulary over the audible objections of recalcitrant plunger specialists like Al Grey, latter-day tailgaters like Knepper and Bill Watrous, and avantgarde rebel rousers like Rudd. With their moans, shrieks, horse laughs, war whoops, comic epithets, and good-natured raspberries, Harris's solos are like casebook illustrations of one of Ellington's favorite maxims: If it sounds good, it is good.

"I wasn't around in the '20s and '30s, when jazz was still new," Harris says. "But from the records I've heard and the stories that older musicians have shared with me, I get the impression that back in that era, horn players prided themselves on developing their own unique sounds, whereas today everybody strives for the same sound. I started fooling around with the plunger in 1976, the year I graduated from college. The plunger had been out of fashion for a long time because trombonists coming after J.J. Johnson wanted that fast, clean sound he was famous for. But I wasn't trying to revive the past. I liked the contrast that mutes and plungers made possible. I was probably motivated by the same restlessness a tenor saxophonist feels when he reaches for a flute or a soprano sax. It gives him a wider range of colors to explore, and as a brass player, I wanted the same advantage.

V iolin, trumpet, and drums—those are the instruments everyone wants to play in the sixth grade. Then the funnylooking instruments are passed out. I had long arms, so I got the trombone." As a

teenager, Harris played in his high-school marching band and worked weekends in a local rhythm and blues cover band. He recalls, "Jazz was the furthest thing from my mind. The only jazz record my parents had was Bitches Brew, which I used to play all the time; I liked its psychedelic jacket. But I had no idea who Miles Davis was or even what instrument he played. I learned all the arrangements for my weekend gigs off of records, which I guess was good preparation for improvisation, in a way. Fred Wesley, the great trombonist with James Brown, was my favorite. But I was never really good enough to copy his solos note for note like I wanted to, which used to frustrate me."

After a year on a lacrosse scholarship at the State University of New York at Farmingdale-where he intended to major in social sciences-Harris transferred to the branch campus at Old Westbury, at the urging of bass guitarist Alonzo Gardner, a boyhood chum [whose band's eponymous Skip and the Exciting Illusions was reviewed here in July]. "Alonzo kept telling me what a fantastic Afro-American Music Department they had there, with musicians like [percussionist] Warren Smith and [saxophonists] Ken McIntyre and Pat Patrick. I studied composition, improvisation, and theory, and the three years I spent there were a series of revelations for me. I started listening to everything I could get my hands on ... Taylor, John Coltrane's Om and Meditations, Johnson. My favorite cut by J.J. was "That Old Devil Moon," from The Eminent J.J. Johnson. His playing was so graceful-I

CRAIG HARRIS

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Aboriginal Affairs. India Navigation IN 1060; 1983. Black Bone.

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Soul Note SN 1055; 1984. (Distributed by Polygram Special Imports.) Tributes.

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OTC 804; 1985. . (420 E. 86th St., Suite 2F, New York, N.Y.

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Cosmos. Inner City IC 1020; 1977. Live at Montreux. Inner City IC 1039; 1978. Unity.

Horo HDP 19/20; 1978 (out of print).

Strange Celestial Road. Rounder 3035; 1980.

With ABDULLAH IBRAHIM (DOLLAR BRAND)

African Marketplace. Elektra 6E 252; 1980 (out of print). With HENRY THREADGILL

When Was That? About Time AT 1004; 1982. (Distributed by New Music Distribution Service, 500 Broadway, New York, N.Y. 10012.)

Just the Facts and Pass the Bucket.

About Time AT 1005; 1983 (reviewed 4/84).

With MUHAL RICHARD ABRAMS

Blues Forever. Black Saint BSR 0061; 1982.

Rejoicing with the Light. Black Saint BSR 0071; 1983.

With DAVID MURRAY

Murray's Steps.

Black Saint BSR 0065; 1983 (reviewed 2/84). (Distributed by Polygram Special Imports.)

Live at Sweet Basil, Vol. 1. Black Saint BSR 0085; 1985 (reviewed 8/85).

10028.)

had never heard anything like it."

The summer following Harris's graduation, his former instructor Pat Patrick, who was at that time still a member of the Sun Ra Arkestra, invited him to sit in with Ra at The Bottom Line in New York. Ra must have liked what he heard, because Harris wound up touring with the Arkestra for close to three years, though he never took the final step of moving to Philadelphia and becoming a full-fledged member of the cultlike Sun Ra "family." "People say that Ra must cast spells on his musicians to make them stay with him so long. But it's the music he writes that accounts for their loyalty-nothing more mysterious than that. We were constantly on the go, mostly in Europe, and it was a great learning experience for me. Sometimes none of his music would be written down, then the next piece would be notated in its entirety. Ra could draw from three decades' worth of music that he had written for that band. If he called a number I didn't know vet, he'd tell me to lay out, and that would be my lesson for the next afternoon. We'd practice the piece in his hotel room. Working with him, I also got free lessons in orchestration, leadership, and showmanship." Free jazz-history lessons, too, it turns out. "One series of concerts was a tribute to Fletcher Henderson. Ra made me learn parts off the pianist's original recordings from the '20s and '30s. A lot of that experience has stayed with me."

ike many contemporary musicians, Harris is something of an amateur ethnomusicologist, collecting instruments and field recordings from around the globe. A trip to Nigeria with Ra for FES-TEC '77 piqued his interest in Pan-African culture. "Like most people, when I thought of African music, I thought of drums. But on that trip, I saw Yoruba vocal choirs and string orchestras from Algeria and Senegal with instruments I still haven't learned all the names of." Since 1980, the trombonist has doubled on the didjeridoo, a hollowed-out wooden tube four feet long and three inches in diameter, which he discovered on a mission to Australia with the expatriate South African pianist Ibrahim.

Lately, Harris has been turning up in some unexpected places. He played in the pit band that accompanied Lena Horne on Broadway in 1981–2, a job that he says taught him "the discipline of knowing that I had to hit all the notes exactly as they were written—no two ways about it." Last year, he made his film debut in Francis Ford Coppola's *The Cotton Club*, though if you blinked you probably missed him and all the other black New York musicians hired to impersonate Ellington's "Jungle" Orchestra. This summer he collaborated with the dance troupe Urban Bushwomen on a piece called *Points*.

Harris's best work as a sideman can be found on records by Ibrahim, Threadgill, Murray, and Abrams [see discography]. His first two dates as a leader were disappointing. The 1983 Aboriginal Affairs was an impressionistic portrait of the outback, ambitiously conceived but rather carelessly executed by a sextet that included Harris's former mentor, alto saxophonist McIntyre; last year's Black Bone was a blowing date that never came to life, despite what promised to be an exciting match-up between Harris and tenor saxophonist George Adams.

The new Tributes is the first record to capture Harris's full measure as a soloist, bandleader, and composer. The didjeridoo's eerie blues cry isn't enough to sustain interest over the length of the one track on which Harris forsakes trombone, but everything else is so fabulous, it's easy to overlook this minor self-indulgence. The choice items are a brace of pungent sweetand-sour ballads that reveal Harris's unexpected flair for the reflective. And there is plenty of variety, with an elongated bop line, an African high life delivered in march formation (it could be titled "Henry Threadgill Meets Abdullah Ibrahim," in homage to these former employers), and an inspired bit of chanting tomfoolery dubbed "24 Days an Hour." The supporting cast is superb, with bassist Dave Holland and drummers Billy Higgins and Famoudou Don Moye underlining the rhythmic acuity of Harris's writing and with Vincent Chancy's French horn adding just the right amount of vinegar to an all-brass front line that also includes trumpeter Junior Vega and cornetist Olu Dara.

The trombone's return to prominence is part of a larger brass renaissance in jazz: Tubas are throwing off the shackles of Dixieland, French horns are renouncing the artifice of Third Stream, and trumpets are remembering how to growl. Harris would like to see the septet he assembled for Tributes become a permanent band, but since neither he nor any of his contemporaries works frequently enough to keep sidemen on salary, "working bands are a fantasy in this day and age." He explains, "That's why you see composition making a comeback, which is another example of how things move in cycles. The approach to improvisation hasn't really changed all that much in the last few years. The change has been in what surrounds it, the move away from conventional 12- and 32bar forms to test new ideas-not that anything you can do is ever really new. Some of the Henderson material I played with Ra was pretty unusual in structure, even by today's standards. Now everything has to be written down, because bands don't play together enough to develop that telepathic communication. We try, but we have to start from scratch every time out."

Fortunately, Harris has been able to draw from a nucleus of musicians who have formed alliances in a number of transient bands. For example, he and Dara, who played alongside each other in the Threadgill Sextet for four years, now team up in Murray's Big Band as well as in Harris's own septet and Dara's Okra Orchestra. And Higgins is currently both Murray's drummer and Harris's. "Sure, we all know one another's moves. But it's just not the same as playing together all the time," complains the trombonist. As our afternoon together drew to a close, it became increasingly apparent that Harris would have to line up several substitutions for his septet's premiere engagements the following week; Dara, Vega, Holland, and Higgins all called to say they had prior commitments.

"We live in the era of the free agent, just like baseball," Harris sighs. "But just imagine what my band or any of the bands I've played in—David's, Muhal's, Threadgill's—would sound like if we could play together every night for six months, the way I once did on the tour of Europe with Sun Ra." It is indeed something to be imagined, for it seems unlikely to come to pass. Still, any band with Craig Harris as a member has quite a bit going for it right there.

REVIEWS

Happily Divorced

X:

Ain't Love Grand.

Michael Wagener, prod. Elektra 60430-1. •••

THE KNITTERS:

Poor Little Critter on the Road.

⊖ Billy Zoom, Patrick McDonald, and John Doe, prods. Slash 25310-1. . (Distributed by Warner Bros.)

EXENE CERVENKA/WANDA COLEMAN: Twin Sisters.

• Freeway FRWY 1057. (Distributed by Rhino.)

Rising above the volatile West Coast hardcore scene in 1980 with their debut Los Angeles, X forged a new rockspace by crossing thrash's fierce backbeat and urban outlawism with middle-American values and white country blues. The tension this created was spelled out in the lyrics of husband-andwife singer/songwriters John Doe and Exene Cervenka, who mined sharp images of wrecked kitchens and soggy dawns out of the fights, flights, and cynicism that challenged their commitment. Their willingness to risk intimacy with the audience made listening to an X record like overhearing nextdoor-neighbor parties and brawls. Their public love affair asked whether two headstrong romantics could build a domesticity governed by independence and mutual respect, as well as by the need for sex and security.

Ain't Love Grand is less biting than any of X's four previous LPs, exhibiting a mainstream departure some listeners will consider maturation, others a self-conscious bid for long-sought (and well-deserved) widespread commercial success. The solidarity and the tenderness that Doe and Cervenka express here are unusual and unusually ironic, since the couple divorced last spring. They replace the vivid clutter of orange nightgowns and Florida postcards with melancholy clichés such as "Watch the Sun Go Down" and "I'll Stand Up for You." The strident single, "Burning House of Love," is sparked by Doe's passionate jealous-husband delivery and Billy Zoom's sweet guitar-picking, but



Exene Cervenka and John Doe (center) of X try a little tenderness.

Ain't Love Grand turns lackluster as often as it stirs the emotions, even breaking into mindless offense once on "My Soul Cries Your Name," a catalog of Exene's body as recalled by her ex.

True to pop tradition, the alternately hooky and haunting melodies of these songs complement and distract from the relative banality of their lyrics. "Around My Heart," a recollection of the jaded pair's first meeting at the "devil's workshop," is memorable for its simultaneously somber and uplifting chorus and simple, pensive electric-piano accents. Exene, who, as critic Bart Bull described, "has the same bony-fingered grasp on pitch as the late Ernest Tubb," is not especially well suited for blues crooning, but "My Goodness" resonates with a wry despair, thanks to smooth pacing and austere echoes and synth winds added by producer Michael Wagener (best known for his work with the German heavy metal band Accept). "Little Honey," co-written by Doe and Blasters guitarist Dave Alvin, is a sultry, driving rocker spiced with cool walking-guitar rides. Ain't Love Grand stands as a testament to Doe and Cervenka's ability to part friends and continue their relationship outside of the marital arena-even though the LP may be an insight or two short of what loyal fans have come to expect.

Following the release of 1983's More Fun in the New World, rumors began surfacing about the Knitters, an acoustic group in which Doe and Cervenka paid homage to folk's singing-family tradition. Richer in spirit than in listening pleasure, Poor Little Critter on the Road, the first recorded evidence of the project (in which all of X's members participate), is an uneven mix of novelty cast-offs (like the rockabilly version of Ain't Love Grand's "Love Shack"), hokey hoedowns (the title track), and sober reworkings of traditional hymns ("Walking Cane") and country classics ("Poor Old Heartsick Me"). Good folk relies heavily on captivating vocals; the voices here (Exene's particularly) spouting love in vain don't lack sincerity as much as true grit. There might be a reflection of X's white-trash roots, and the Knitters may expose the likes of Merle Haggard to a new audience, but Poor Little Critter fails to cast new light on the material or the original band.

The most entertaining thing about Exene's side of the poetry record *Twin Sisters* is the opening, in which an announcer pokes fun at X, praises Exene for her long-standing support of L.A.'s spoken-word scene, and suggests, "Don't be afraid to laugh; she did when you came in." Devotees, especially poetry aficionados, may not find her disjointed, adolescent free-associations funny. But many will appreciate the introduction to Wanda Coleman, ex-barmaid, welfare mother, waitress, and medical transcriber who currently holds a Guggenheim fellowship. Her "nigger rhythm rhymes" celebrate, among other things, black street life and the travails of lone motherhood, L.A. freeways, unpaid bills, and run-ins with the law. (Her books, a better bet, are available from Black Sparrow Press, P.O. Box 3993, Santa Barbara, Calif. 93105.) Punk, folk, pop, poetry; X's auxiliaries deserve credit for finding lines that connect and divide these interests. Even if consumers find that the experiments don't quite pan out. *Rosemary Passantino*

VARIOUS ARTISTS:

We Are the World.

● Various prods. Polygram 824 822-2. ⊙ CBS USA 443. ☜

Hot on the heels of Live Aid, the event-ofthe-millenium-till-the-next-one, it seemed appropriate to take a second look at the eventof-the-millenium-till-that-one, USA for Africa's "We Are the World." So one recent evening at the Compassionate Digital Pleasuredome, we slipped into something comfortable and listened to the Compact Disc version of the *We Are the World* album.

Designated "The Historic Recording" on the cover, the familiar (but not unpleasantly so) six-month-old title chartbuster retains its modest charms and Life-magazine spectacle. It's a digitally-mixed analog recording, yet the massed chorus, which I'd hoped would be immediate and overwhelming, actually sounds rather distant and clinical on CD. The collage of individual leadvocal fragments, however, definitely benefits from digital technology's enhanced presence as much as from the careful ministrations of producer-to-the-stars Quincy Jones. His all-night task, cited in the credits as "solo vocal choreography," remains a jigsaw delight: Dionne Warwick and Willie Nelson must be the all-time serendipitous duet combination, Tina Turner and Billy Joel the most unfortunate. Overall, though, lack of unpleasantness is still the song's salient characteristic-one it shares, not surprisingly, with ubiquitous co-writer Lionel Richie, the tirelessly bland and borderline inoffensive cheerleader-cum-ham who gives new dimensions to Easy Listening. Here, the listening is so easy that, as with a lot of yuppie media, it's nigh on impossible to distinguish promotion and advertising from editorial: the dread "advertorial" fungus.

(Continued on page 80)



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79

(Continued from page 79)

"We Are the World" is, in fact, the most extravagant soft-drink commercial ever made. The concept alone far outstrips previous memorable achievements in the genre, such as the incandescent Aretha Franklin/ Ray Charles radio spot of several years ago and the happy surprise of Aretha's recent TV track for the once-and-future "new" Coke. Perhaps she wasn't invited because Richie insisted on Pepsi-identification. I didn't see Bill Cosby there, either.

This collection also includes "nine new superstar songs," a very mixed bag that zigzags drunkenly from the execrable through the acceptable to the sublime: from Chicago's creepily out-of-place (and aptly titled) "Good for Nothing" through Steve Perry's typically attractive but chronically contentless singing on "If Only for the Moment, Girl," or Prince's hypnotic but chronically crypto-scriptural "4 the Tears in Your Eyes," to Bruce Springsteen's live Jimmy Cliff cover, "Trapped," and Tina Turner's brilliantly performed "Total Control." The programming and remote-control functions of my CD player proved extremely helpful.

Except for a handful of Bruce or Prince completists, however, the overwhelming majority will have purchased the album, cassette, or Compact Disc to own the most expansive, most public-spirited jingle to date and, of course, to do a little good in the bargain. The very notion of assembling dozens of stars to record an expertly produced, massively supported commercial for the starving—not, mind you, a raggedy ersatz-Xmascarol—could only occur in California. Charitable Hootenannies of the Rich and Famous... ah well, from each according to their abilities, to each according to their needs. Finally, I find this sleek, uplifting, middle-class entertainment a curiously refreshing tonic compared to Live Aid's marathon orgy of self-congratulation and geopolitical naiveté. Nobel Prize, my ass. USA for Africa just wants to buy the world a... Pepsi. Jeff Nesin

SHANNON:

Do You Wanna Get Away.

○ Mark Liggett and Chris Barbosa, prods. Mirage 90267-1. (Distributed by Atlantic.)

On Do You Wanna Get Away, Shannon breaks off from the sound that has made her Queen of the Dance Floor. That's not an easy move. "Give Me Tonight," "My Heart's Divided," and "Let the Music Play" were not just urban-pop gems, they were blueprints for numerous other hits. The stars of these songs, which were hooky to the max, were the whirling, buzzing, pounding electronic gizmos that Shannon, despite a narrow range, directed with controlled ease. The tracks were crafted yet funky; imitated yet still "fresh."

Although producers Mark Liggett and Chris Barbosa, in an effort to transcend the machinations of their original formula, have pulled Shannon into simpler, slower, more radio-ready pop settings, the atmosphere on *Do You Wanna Get Away* is still created by sonics. Pile-driving funk rhythms and effects-laced synths occupy centerstage, but a rock guitar ricochets joyfully against the beat in "Doin' What You're Doin'' and the title track, while horns strengthen "Urgent" and "Stronger Together." "Do You Wanna Get Away," the first single, predictably turned many of Shannon's subjects disloyal. Rolling along like a four-wheel crusherlumbering but powerful—it's not nearly as potent and exciting as "Stronger Together," which pumps fire. The c&w-inspired "Why Can't We Pretend" is a promising idea needing more melodic contour and a varied chorus. Passion is lacking from this tune about a broken heart. Shannon's lightthroated honey smacks sound best when squeezed snugly into muscular goodgrooyes, cleverly tinkered with.

Havelock Nelson

ARETHA FRANKLIN: Who's Zoomin' Who?

⊙ Narada Michael Walden, Aretha Franklin, and Dave Stewart, prods. Arista AL 8-8286.

Considering Aretha Franklin's wondrous, erratic career, there's no reason to believe that this new album will be remembered as a more substantial pleasure than lightweight treats like, say, Let Me in Your Life or Jump to It. With nothing left to prove, she seems to have staged a series of small comebacks with some good (though hardly definitive) songs, evidence that, yes, Aretha can perform a starry-eyed duet or that she can make it to the dance floor without stumbling or that her voice can still leap its customary octaves. Although Who's Zoomin' Who? tells us nothing new about her, its simple charms (a firecracker single in "Freeway of Love," the bouncy kiss-off of "Integrity") emanate from a great (or do I mean the greatest?) singer hell-bent on evading her often cumbersome myth. At least the Queen of Soul isn't straining to regain a lost empire.

Aretha hasn't felt so at ease on a record in a long while, and her renewed humor has loosened up her singing: Her cries are freer, her phrasing less convoluted. The spoken in-

POP

BEAT RODEO: Staying Out Late with Beat Rodeo.

EXENE CERVENKA/ WANDA COLEMAN: Twin Sisters.

BOB DYLAN: Empire Burlesque. ARETHA FRANKLIN: Who's Zoomin' Who?

THE KNITTERS: Poor Little Critter on the R<mark>oad</mark>.

SHANNON: Do You Wanna Get Away.

X: Ain't Love Grand.

VARIOUS ARTISTS: We Are the World.

JAZZ

ANTHONY BRAXTON: Composition 113.

ANTHONY BRAXTON: Seven Standards 1985, Vol. 1.

MARTY EHRLICH: The Welcome. FRANK LOWE: Decision in Paradise.

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terludes she scatters throughout are especially bold—touching on "Sweet Bitter Love," sexy on "Freeway of Love," hilarious on "Ain't Nobody Ever Loved You." Principal producer Narada Michael Walden (who's so benign you have to distrust him a little) pitches her his usual gauzy romance dances and positive-attitude slogans, but unlike other collaborations, the average lyrics are attached to sharp melodies. He has also kicked in some fresh rhythms to go along with them, like the island shuffle of "Ain't Nobody Ever Loved You" and the guitar-led stomp of "Push."

The vocal cameos by Annie Lennox (on the funny solidarity chant of "Sisters Are Doin' It for Themselves") and Peter Wolf might seem the kind of celebrity sweepstakes we've seen prop up lots of records, but on Who's Zoomin' Who? these forays also stretch someone whose unstoppable voice has always commanded a solo microphone. And though the single-of-the-summer candidate "Freeway of Love" may be calculated right down to Clarence Clemons's last sax honk, only a party pooper (or a highway patrolman) could resist its revelry. Lest you think all is pink cadillacs and tight pants, old fans should note that Aretha revamps Van McCoy's "Sweet Bitter Love" with painstaking care and that, as usual, one of her own compositions, "Integrity," is a highlight-a rambling, defiant conversation that seems to drift out of a bedroom window at the end of a very long night. Mark Moses

BOB DYLAN: Empire Burlesque.

⊙ Bob Dylan, prod. Columbia FC 40110. ⊡

Empire Burlesque is his first album to include printed lyrics, but for the first time in 22 years I don't need to know exactly what Bob Dylan is saying. His arched-eyebrow generalities and rambling couplets reflected the assumptions of the '60s generation as they documented his own nonconformist experiments. Midcareer he muddled through a search for an idol too big to be shaken. And now reliance on personal romantic extremes brings us Part III: the search for sympathy.

In his role as producer—another first— Dylan attempts to take these tunes beyond the narrow range of his own voice and the settings beyond rock's basics, although past albums have featured many of the same musicians (most notably reggae rhythm masters Sly Dunbar and Robbie Shakespeare). But Dylan's orchestrations fail to utilize the quirkiness of his sidemen or to wring invention from his melodies. Plush studio strings, horns, and echo choruses are only marginally more interesting than the mawkish lines and unsubstantial insights they drape. "Trust Yourself" drones lifelessly. Its offthe-beat, one-note, papery percussion slaps are mixed forward, pushing the four female vocalists into a sludgy backdrop. The less-ismore theory doesn't work, either; stripping to solo acoustic guitar plus harmonica for "Dark Eyes," Dylan's plaintive, strained nasal vocalizing reverts to self-parody.

A kind of apologetic haze drifts over diehard fans whenever Dylan's decline is mentioned: His irony and ambiguous poesy invoked an esprit de corps among potential record-buyers that they still cling to as stubbornly as they barnacle themselves to his sinking ship of state. Apparently bored by most current events, Dylan-a neolithic, egotistic, self-pitying mortal being-has nothing newer to report than that he aches just like a man. He is hung up in the myths he has refused to shed, though his search for a satisfying excuse to maintain them continues. Empire Burlesque might be trying to show us Dylan's onto a new track; but if that's what this corpus of whining banalities achieves, I want to know why we've been waiting for this train so long.

Leslie Berman

BEAT RODEO: Staving Out Late with Beat Rodeo.

Staying Out Late with Beat Rodeo.

○ Don Dixon and Richard Gottehrer, prods. I.R.S. 39027.

Jeeze, what do you say about a band whose biggest controversy—make that only-ever controversy—is their allegedly giving an old bass player the ejection seat because he was too ugly? But you don't put down the Hershey bar just because it's without flair, and similarly you'd be wrong to get on the case of *Staying Out Late with Beat Rodeo*, the band's first major-label release, just because they're a little short in the élan department. At last: Somebody's done something new with meat and potatoes.

With falling-in-love one boundary, and falling-out-of-love the other, it's no surprise that this is a pop album. But make this one that goes pop!, à la Marshall Crenshaw, and one that endows its themes of the heart with far more feeling than a poltroon like Sting

FORMAT KEY

O LP/EP

Cassette

- O Compact Disc
- Videocassette
- ♥ Videodisc
- 🕀 12-inch single
- Open reel

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knows about. There's a lot of twang in Almaas's voice, and his singing could get too sweet if its lament didn't sound so true. This is one bar band with staying power.

The power of the songs is in their details, their not-quite-tricks. Take the nifty opening of "Mimi": Almaas alone with his guitar, followed by a lick half-copped from '60s soul. Only then does the song proper commence. ("Mimi" is the one U.S. addition to this LP, which was originally released last year in Germany, and it's a considerable one. Too bad I.R.S. also ditched Almaas's kinda-sorta tribute to Django Reinhardt.) Or take the hammer-and-anvil accompaniment to the guitar solo on "You're the Only Reason," or the sad, sad tempo changes on "Who's Gonna Be Around."

But naw. None of these details would matter if Almaas didn't throw off as much good-guyness as any of the boys-next-door from "Mystery Date." He almost is square, and his songs are the better for the near miss. On one track, over a slow beat that shouldn't work but does. Almaas broods about a lover who has changed her mind; "Mistake" is all he can say, and it says it all, the dolefulness of his voice quite palpable as it bleeds into the gentle music. Integrity is an overrated ideal; I'd rather hear Don Henley's sleazy bologna than most of the straightfrom-the-heart hooey on the radio. But Almaas is honest without being serious, and believability is definitely his trump card. Along with 12 unfailing songs, it's what makes Staying Out Late something worth losing a little sleep over. R.J.Smith

ANTHONY BRAXTON:

- Seven Standards 1985, Vol. 1.

ANTHONY BRAXTON:

Composition 113.

O P. De Freitas, prod. Sound Aspects SAS 003. (Distributed by Polygram Special Imports.)

It's a sign of Anthony Braxton's established prodigiousness that the close release of these two very different records will come as no surprise to anyone.

On Standards, the multireedman, here on alto sax, is joined by a conventional rhythm section led by pianist Hank Jones. This isn't the first time this avant-gardist has chosen a mainstream postbop setting-his two-volume In the Tradition predated the current neoclassicist surge by almost a decade-but on this session his playing reveals an ambivalent attitude toward the genre. His solos on Clifford Brown's "Joy Spring" and the pop standard "I'll Remember You" quickly turn to double-timed, even rushed, phrases, as if he were impatient with the midtempo constrictions of the music. These are exciting improvisations, but the rhythm section sounds stranded, left to serve as a conceptual foil for Braxton's rapid deconstructions. Pianist Jones especially, though graceful and articulate throughout the set, seems merely to share studio space with the saxist on these cuts. By contrast, on such selections as "You Go to My Head" (taken at a sprightly clip) and the ballad "Spring Is Here," Braxton's debt to West Coast cool players like Lee Konitz, Warne Marsh, and Paul Desmond is evident as he displays a totally convincing romantic side-an approach more in tune with his cohorts.

But if Standards documents an occasionally uneasy encounter with the tradition, *Composition 113* presents Braxton unbound, at least in the expressive sense. This solo horn album (a form in which he has done ground-breaking work) features his soprano sax blowing freely within a highly structured piece. The composition is divided into six sections; each starts with the same 11note theme, played in various ways (e.g., broken up with silences or distortedly flashing by). The separate segments represent different aspects of characters in a rather mysterious Braxton play, which he murkily delineates in the liner notes. As indicators, the



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section titles are sometimes direct ("Strength" features much overblowing, "Humor" has a repeated laughing figure, "Acceptance" is made up of soft, sad tones) and sometimes confusing (a section called "Belief" is in the same apocalyptic cast as "Strength," while the lighter touch of "Courage" resembles that of "Acceptance"). At any rate, though the structuring ploys that Braxton uses to organize his material may at times seem needlessly obtuse, the range of the resulting music is rich and diverse. *Composition 113* takes the listener through some startling and often beautiful soundscapes.

Richard C. Walls

FRANK LOWE:

Decision in Paradise.

 Glovanni Bonandrini, prod. Soul Note SN 1082. (Distributed by Polygram Special Imports.)

MARTY EHRLICH:

The Welcome.

P. De Freitas, prod. Sound Aspects SAS 002.
 (Distributed by Polygram Special Imports.)

Being a natural pessimist, I used to go with the party line: The era of the saxophone colossus is over. Okay, so there is no new Coltrane or Rollins or Coleman (Ornette or Hawkins—take your pick). Enough already. Critical kvetching is boring and promotes premature senility; it's one thing to harbor some healthy cynicism, it's another to be deaf to what is out there.

Which leads me to the announcement that anyone interested in the state of jazz saxophone should listen to Frank Lowe and Marty Ehrlich. Lowe began making records almost 20 years ago, when he was a Traneinspired high-energy player; his pared-down, blues-based individuality runs counter to today's excess of fleet-fingered stylists. Ehrlich, on the other hand, uses his debut (he has been a sideman for most of the important new-jazz figures of the Seventies) to display the kind of intelligent command of his instruments (alto, flute, and clarinets) that gives virtuosity a good name.

Lowe's Decision in Paradise must be the most self-conscious production of the year; each member of his group represents a different aspect of post-Sixties jazz. Drummer Charles Moffett and trumpeter Don Cherry are the Ornette Coleman contingent; trombonist Grachan Moncur is Blue Note avant-bop personified; pianist Geri Allen and bassist Charnette Moffett are two young





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bright hopes. That they all mesh so well may be attributable not to the musicians, however, but to the conventional forms that Lowe draws upon. No, nothing is really too radical here: The rhythms are steady, the blues changes upfront and clear, the heads played in unison with orderly solos following. What sparks this session is the like-minded approach that most of the soloists take. The order of the day was the compact phrase, darting and dodging spurts of melody that moved against the rhythm section's even flow, causing an edgy but attractive tension.

But as good as the guests are, no one grabs me like Lowe. With his dry and vibratoless tone, bone-bare phrasing, and brutish refusal to comply with the beat, he just doesn't speak the same language as the average saxophonist. Lowe strips the blues to its essentials, and the experience can be intense.

Ehrlich is less startling, but just as invigorating. His choice of instruments and pungent attack bring Eric Dolphy to mind, but there is an important distinction: Where Dolphy was sweeping and all-but-obsessive, cramming as many notes and ideas as he could into each solo, Ehrlich delivers only the choicest of considered lines. Working simply with a flexible bass-and-drum team, he can move about freely, playing with tone and time, but like Lowe, he always resists any leftover Sixties honk-and-bray effusions. The Welcome and Decision in Paradise have convinced me that the World Saxophone Quartet hasn't cornered the woodwind market. I guess I'll have to find something else to complain about.

Steve Futterman

LICORICE FACTORY: Licorice Factory.

The Licorice Factory, as anyone familiar with 1930s slang might guess, is made up of clarinets: Mark Whitecage on E flat alto, Mike Morgenstern on B flat bass, and Perry Robinson on B flat soprano. For almost 20 years, Robinson was the only indication that the clarinet might survive in jazz. Isolated, he eventually moved in with the avant-garde; in bop, only Buddy DeFranco and Tony Scott kept the instrument alive.

With his two more recently arrived colleagues, Robinson has developed quite a repertoire, ranging from the wry humor of "Laurel and Hardy Meet the Three Stooges" and Morgenstern's "A Goodman's Hard to Find" (built around a recurring you-knowwho riff) to Willie Nelson's "Always on My Mind" and more. Peter Drake's reworking of Oliver Nelson's "Stolen Moments" is especially rich and provocative. As an ensemble, the three clarinetists rely primarily on a low, woodsy-toned range, darkly mellow but edging toward solemn bird-cries. Collectively, their sound is almost familiar, but different enough to both lull and stimulate the ear. It is melodic, entertaining, accessible, and quite unlike anything else you've heard.

John S. Wilson

McCOY TYNER: Fly with the Wind.

● Omin Keepnews, prod. Milestone FCD 601-9067. ○ ⊡

Part of Milestone's effort to present McCoy Tyner in new settings, the 1976 Fly with the Wind set up the pianist with a string section, a harpist, and an oboist; the rhythm section featured bassist Ron Carter and drummer Billy Cobham. Tyner shared the soloing with flutist Hubert Laws and did the arrangements himself. The LP, though well received when it came out, seemed to me flawed by the quality of the sound and by the relative fussiness of Tyner's writing, particularly for strings; the ensemble is overly busy, but the violins are simply unnecessary.

I was curious to find out if the Compact Disc could clarify so many different voices. To some extent it does, but the band still sounds as if it's jammed onto a too-narrow stage, too close to the audience. (How do classical recordings get that sense of space in the strings?) Cobham's drums are everywhere: One tom-tom is positioned so far to the left that it's hard to believe it's part of the rest of his drum kit; elsewhere he's so spread out that the rest of the band seems to be playing in his lap. This disc improves substantially when the sound is thinnest-Tyner opening "Salvadore de Samba" over Cobham's woodblocks, Cobham's duet with Carter on the same track, Laws's alto flute solos, and the thoroughly lyrical "Beyond the Sea." Tyner's solos-with their steely trills, shakes and rolls, crisp single notes, and resounding chords-are as exciting as ever, but his clarity is almost overwhelmed by the shrill sound of a hyperactive accompaniment. Michael Ullman

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