

# Audio

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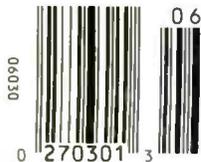
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J. Peter Montcrieff

"International Audio Review", Hotline #43-45

### **CES Winter '87**

"Their KCD-20A puts other CD players in the shade musically... it is a clear first-choice recommendation among CD players."

Neil Levenson

"Fanfare", Vol.10, No.4

### **CES — Summer '87**

"Pure musicality is the only way I can adequately describe what I heard: no sensation of electronics or speakers, with believable sound staging and tonal accuracy... I think it would be safe to say that this represented the most 'music for dollar' at the show."

Lewis Lipnick

"Stereophile" Vol.10, No.5 Aug. 1987

### **CES — Winter '88**

"The Death of Mid-Fi: The Big Chill in Vegas"

Michael Fremer

"The Absolute Sound" Vol.13, Issue 52, page 250

### **CES — Summer '88**

We weren't there.

### **CES — Winter '89**

"...I am pleased to note that the sound in the Kinergetics room was stunningly true to the sound of the original Steinway. Nice one, Ken and Tony!"

John Atkinson

"Stereophile" Vol.12, No.3, Mar. 1989

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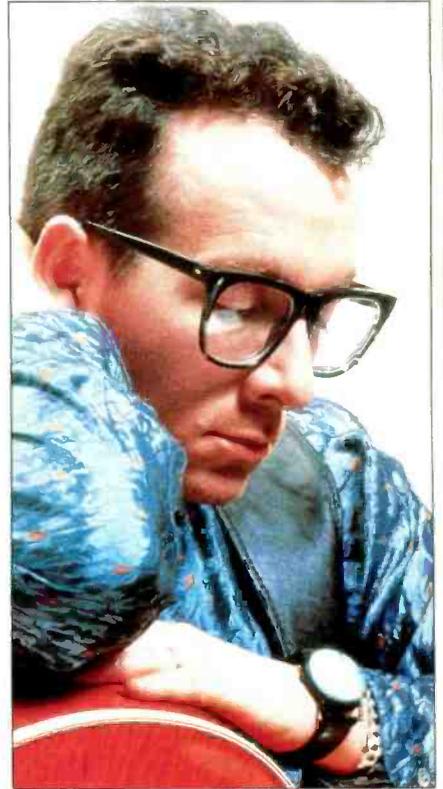
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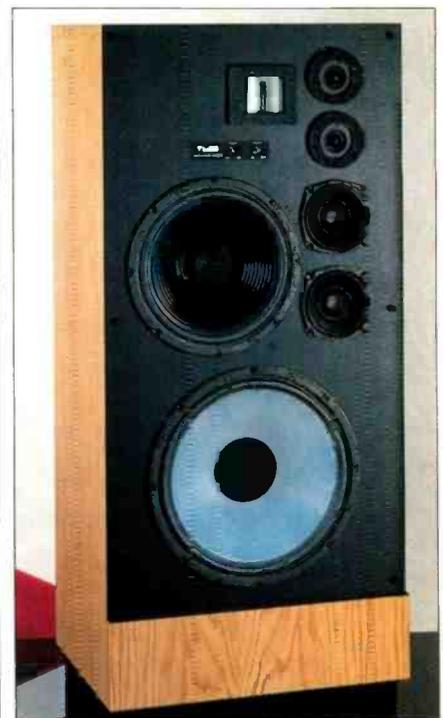
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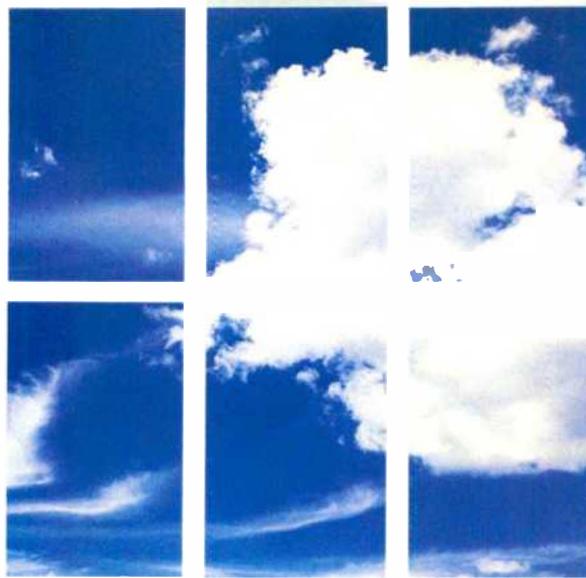
The Cover Equipment: Denon DCD-3520 Compact Disc player.  
The Cover Photographer: © 1989, Mark Hill.  
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Audio Publishing, Editorial, and Advertising Offices,  
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VMPS Speakers, page 118



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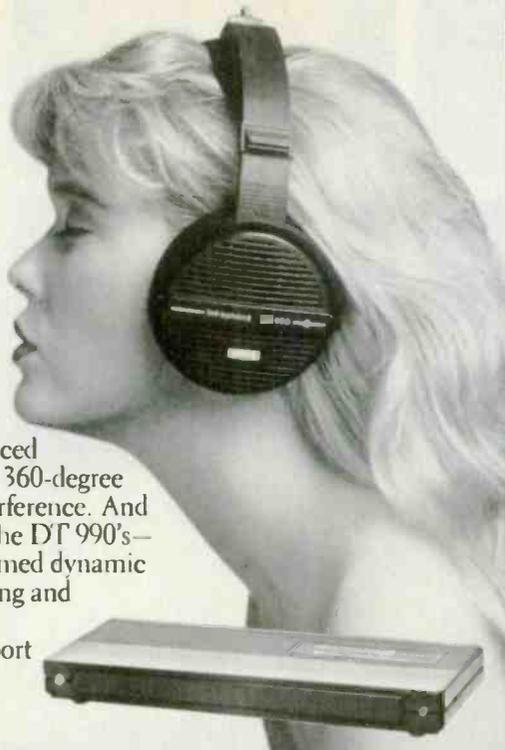
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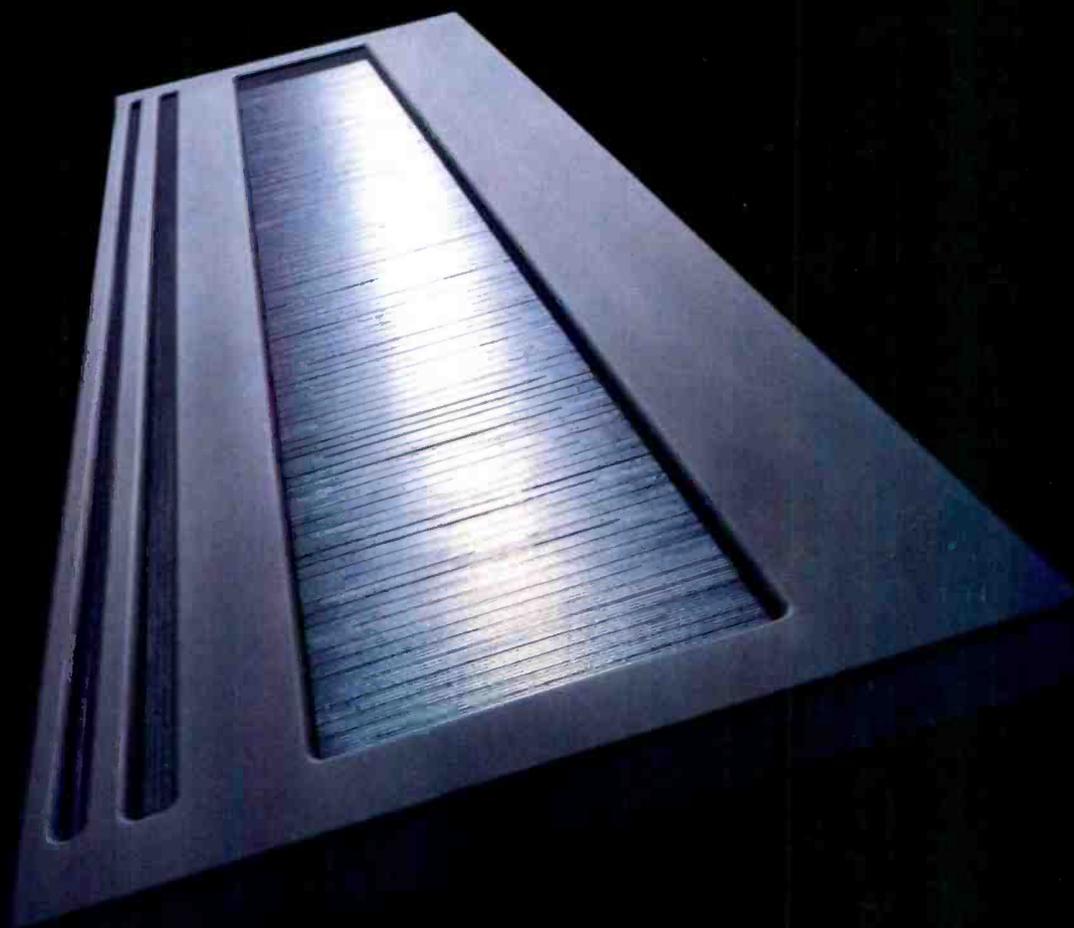
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**AUDIO**, June 1989, Volume 73, Number 6.  
AUDIO (ISSN 0004-752X, Dewey Decimal Number 621.381 or 778.5) is published monthly by DCI, a wholly owned subsidiary of Hachette Publications, Inc., at 1515 Broadway, New York, N.Y. 10036. Printed in U.S.A. at Dyersburg, Tenn. Distributed by Warner Publisher Services Inc. Second class postage paid at New York, N.Y. 10001 and additional mailing offices. Subscriptions in the U.S.: \$21.94 for one year; \$39.94 for two years; \$53.94 for three years; other countries, add \$6.00 per year. **AUDIO** is a registered trademark of DCI. ©1989, Diamandis Communications, Inc. All rights reserved. **Editorial contributions** should include return postage. Submissions will be handled with reasonable care, but the Editor assumes no responsibility for safety or return of manuscripts, photographs, or artwork. The Publisher, in his sole discretion, reserves the right to reject any ad copy he deems inappropriate. **Subscription Service:** Forms 3579 and all subscription correspondence must be addressed to AUDIO, P.O. Box 52548, Boulder, Colo. 80321-2548. Please allow at least eight weeks for the change of address to become effective. Include both your old and your new address and enclose, if possible, an address label from a recent issue. If you have a subscription problem, please write to the above address or call (800) 525-0643; in Colorado, (303) 447-9330.



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Digital Sync for jitter-free performance.

In designing the CDP-R1, Sony ES engineers recognized a critical obstacle to improving CD playback quality: time-base errors known as "jitter." When jitter is present at the input to the D/A converter, these errors cause modulation in the analog signal, veiling the music and deforming the soundstage.

Our investigations led to the development of the Sony CXD-8003 Digital Sync IC. Incorporated into three new ES Series players, it maintains time-base



And in Japan and Europe, the R1 has likewise driven the leading audiophile critics to unstinting admiration. But at a suggested retail price of \$8,000, it has been an experience reserved for the uncompromising few. Until now.

Now the Sony ES engineers have applied the invaluable lessons learned in the CDP-R1 to our other ES Series Compact Disc players. Which means now you can enjoy many of the benefits of an \$8,000 masterpiece without spending \$8,000.

## Noise Shaping with 45-bit Processing.

The accumulation of fractional errors in conventional digital filters can result in less than full 16-bit decoding accuracy. That's why the Sony CXD-1144 digital filter IC of the CDP-R1 calculates to an unprecedented precision of 45 bits, while operating at an 8X oversampling rate. And it's this advanced technology that has been incorporated in our new CDP-508ESD, 608ESD, and X7ESD players.

To convey this superlative accuracy to the digital-to-analog converter, these players also incorporate Sony Noise Shaping technology. Noise Shaping reduces requantization noise and allows the 18-bit linear converters to extract more musical detail than ever before. In particular, bass fundamentals are reproduced with a strength and clarity that leaves conventional CD players far behind.

accuracy within millionths of a second, correcting errors long before they can affect the music.

## Low-Noise Servo Stabilizer Circuit

For the CDP-R1, Sony ES engineers even examined the conventional assumptions about the most basic of CD functions: disc tracking. The result is Sony's Servo Stabilizer Circuit, a trailblazing design we've carried over to our other models. This stabilizer not only improves tracking on badly scratched discs, but reduces radiated servo noise by as much as 10 dB.

## A performance sustained.

With a technical heritage such as this, it's no wonder the new ES Series CD players and CD changers perform so much better than so many others. But then, it's a superiority we really shouldn't flaunt. After all, we did start with an unfair advantage.

The excellence of Sony's ES Series is also reflected in the three-year limited parts and labor warranty (see your authorized Sony ES dealer for details). For more information on where you can audition the full line of Sony ES components, call 201-930-7156 (Monday-Friday, 9:00am-5:00pm EST).



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## The Cost of Music

Dear Editor:

In the October 1988 "Signals & Noise" column, David A. Morton of Greenville, S.C. stated that record and CD clubs offer the most cost-effective opportunity for purchasing recorded material. He went on to say that the average cost of these purchases demonstrates overcharging by record labels at the retail level. This is not the case, and Mr. Morton obviously does not have sufficient information on which to base his opinion.

The fact of the matter is that the reproduction costs of recorded material are subsidized by the artist. It is universally accepted in the recording industry, pursuant to contracts, that the artist shall reimburse the label for all mechanical costs of reproduction including recording, engineering, marketing, production of the sound-source medium (such as CDs and LPs), jacket costs, and sometimes promotional materials (such as videos and advertising). In regard to record clubs, the artist receives no royalties for sales at reduced prices or for giveaway items. Furthermore, the artist's royalties are limited to 50% of the customary rate for sales at the regular club prices.

As you can see, the giveaways and the reduced prices available through record clubs are not a result of reduced profiteering but subsidies at the expense of the artist. The artist generally makes 65¢ on every recording (regardless of the format) sold at retail prices. In fact, a major recording artist (highest paid in terms of market sales) may make as much as \$1.00 to \$1.20 per record. Major expenditures are necessary for unknown talent, and the likelihood of success is poor. A general exception exists in the classical and jazz idioms, but this market comprises less than 10% of total sales and combined market share. Also, artists who are fortunate enough to obtain a recording contract generally receive a sizable initial bonus, but all reproduction and marketing costs are credited against this amount before the royalties are paid.

Finally, this is not to say that the recording industry is not profitable, as the opposite is true. Whether recording artists are treated unfairly has and will be an ongoing dispute. The purpose of

this correspondence is only to clarify the profit and loss structure of record clubs.

J. Michael Gatien, Esq.  
North Canton, Ohio

## Lookin' Good

Dear Editor:

I have been a reader of your magazine off and on since the '50s. I was in on the do-it-yourself period of the late '40s through the '50s and into the '60s.

I would like to say that I enjoy Edward Tatnall Canby's articles on the early days of hi-fi, and that I am glad Joseph Giovanelli has been able to continue his work with audio equipment. I've known of Mr. Giovanelli since the beginning. I still have an article from an *Audio* of long ago, entitled "Our Mr. Giovanelli Decides To Go Stereo," which described his design for an audio amplifier.

What prompted this letter was my appreciation of an area not usually mentioned. I think the "make up" of your magazine—especially the stunning covers, which show great character and what I would term "masculine beauty"—is probably one of the most outstanding among today's periodicals. The staff of *Audio* is to be commended. You are obviously devoted to the pursuit of excellence. Allow an old man to salute you.

William C. Poole  
Albuquerque, N.M.

## Silencing a Musical Voice

Dear Editor:

I read with great interest Michael Wright's article, "Putting the Byte on Noise: NoNoise from Sonic Solutions," in the March issue. I have a large collection of older LPs and 78s containing both jazz and classical selections, and I am quite familiar with the noise problems on these earlier discs.

I purchased the Jelly Roll Morton disc on vinyl, and I thought you would be interested to know that, at least on the vinyl version of this recording, the NoNoise process seems to have thrown the baby out with the bath water. While there is indeed a significant reduction in surface noise from the older Morton records (and I have them in various incarnations and reissues from over the years), the music has been robbed of most of its vitality and life.

The entire record sounds as if the music is coming from deep inside some artesian well with a tarpaulin thrown over it. Orrin Keepnews' liner notes to the contrary, in my opinion this disc will not introduce new generations to the Morton repertoire because the pieces sound very much like old and dusty museum objects, robbed of all of the vitality of the originals. This is evident to my audiophile and nonaudiophile friends. I have directly compared the music on this disc with earlier French RCA and American Bluebird material. Everyone on my informal listening panel agrees that the older discs, while perhaps a bit noisier, are much more lifelike and emotionally rewarding as a musical experience.

True, I have not heard the CD of the music, and perhaps the Morton material is not representative of what the NoNoise process can attain. I am by no means a romantic about old vinyl noise, but I do assure you that I will be very cautious in purchasing material which has been subjected to this amusing process.

On another subject, I want to point out that a continuing highlight of your magazine is the various contributions by Edward Tatnall Canby. Whatever the subject, his knowledge, enthusiasm, and sheer enjoyment of recorded music come shining through.

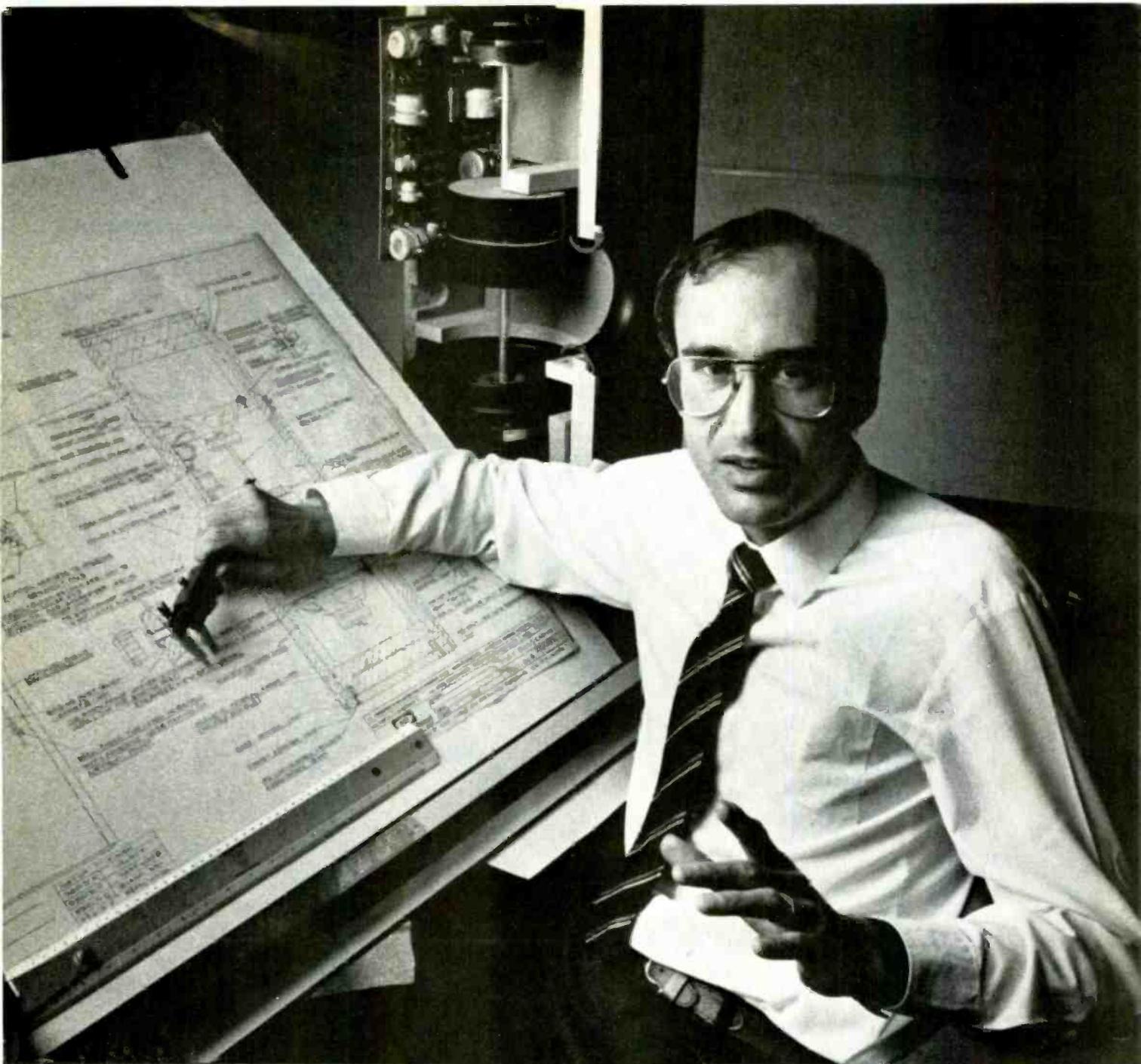
Thanks very much for an enjoyable read each month.

Richard P. Clancy  
Ashland, Mass.

## The MIDI Is the Message

Dear Editor:

I have been a subscriber to *Audio* for 10 years, and I am finally writing to tell you how much I enjoy your magazine. I have always found *Audio* to be one of the best sources of theory, new developments, excellent do-it-yourself projects, product information, and reviews. Your magazine is an important part of my monthly reading. As a recording engineer, I subscribe to *Mix*, *Recording Engineer/Producer*, *Studio Sound*, *dB*, *Electronic Musician*, and *Audio*. Of all these, yours is by far the most well rounded. The theory and construction articles are interesting and informative to pros as well as consumers, while the product reviews are beautifully balanced between objec-



**'We can't break the laws of physics, only bend them.'**

—Mike Gough, KEF CHIEF DEVELOPMENT ENGINEER

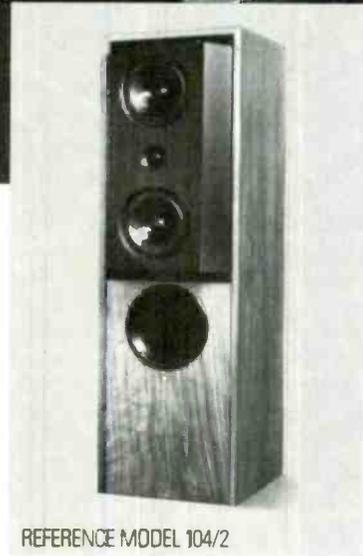
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I see the use of MIDI and samplers as a great leap forward in the art of making music, but there is plenty of room for debate.

tive measurements and subjective listening. I think you do a fine job of presenting the pro's perspective to the consumer, and vice versa. No other journal does it so well.

May I offer a suggestion? There are some amazing developments going on right now in the music world. MIDI (Mu-

sical Instrument Digital Interface) and the development of the sampler (short-term, solid-state digital recording) are revolutionizing the way music is made. New sounds are being made by digitally splicing acoustic sounds onto synthesized sounds. A composer using a sequencer and multi-voice MIDI

instruments can hear how a piece will sound with an almost unlimited variety of sounds, not just the sounds of a few available instruments. On the other hand, some people argue that MIDI is replacing live musicians with robots, and the music sounds like it. I see it as a great leap forward for the tools available for making music, but there is plenty of room for debate here. I think readers would find this subject fascinating, and the ensuing letters will add plenty of spice.

Again, thank you for such a fine magazine. I look forward to each issue.

John McCortney  
Los Angeles, Cal.

*Editor's Note:* Although we editors are staying on top of MIDI and sampling technologies, we have yet to include a feature on either area. Such articles would probably get into the ethical and aesthetic questions you raise. Any questions, comments, or concerns about articles on these topics?—E.P.

#### PS Equals Public Service

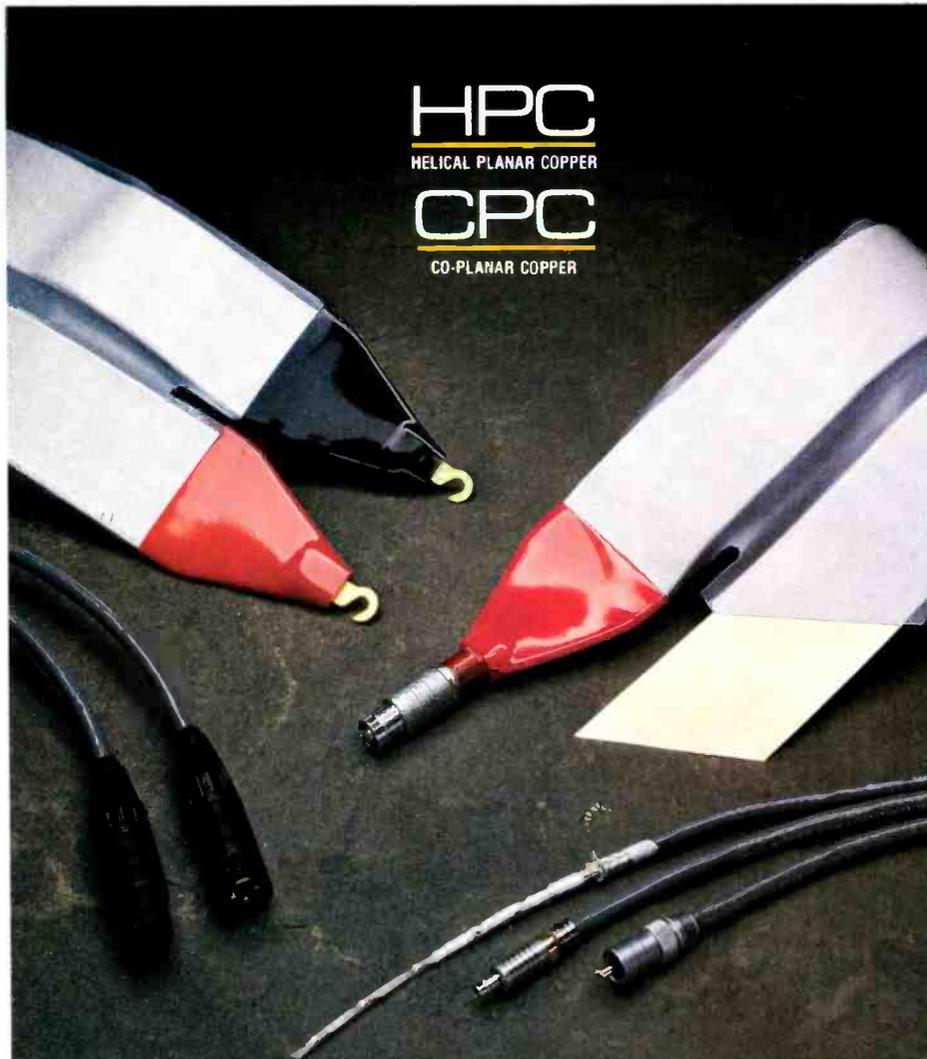
Dear Editor:

I recently had something go wrong with my five-year-old PS Audio preamp—one of the phono channels was getting noisy. I called PS Audio, and they said to send it to them for repair. Two weeks later, I received my repaired preamp, and the company had also replaced a few noisy transistors in the line-level stage. Although my preamp was years out of warranty, there was no charge for the repairs.

As a subscriber to *Audio*, I believe that manufacturers who value their customers as much as PS Audio need to be publically recognized. Consumers of audio equipment need more than good sound to get their money's worth. PS Audio is setting standards few companies will match in service or good sound.

Roger Sherman  
Seattle, Wash.

*Editor's Note:* We agree with Mr. Sherman's opinion—such equipment makers ought to be publically applauded. If you feel you have received service above and beyond the normal call of duty, either from a manufacturer or from a dealer, let us know, so that we can let the rest of our readers know.—E.P.



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*—Frank Adams, KEF QUALITY ASSURANCE INSPECTOR*

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REFERENCE MODEL 103/3

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KEF Electronics of America Inc., 1120 K Sullyfield Circle, Chesapeake, VA 22021, (703) 531-8800  
Smith Sound Equipment Ltd., 1000 Park Road, Westborough, Quebec, Canada J1L 6T9 (514) 491-1149

## Softened Water and Room Humidifiers

*In the September 1988 issue, a suggestion was made in "More About Humidifiers" to use hot, softened water in ultrasonic room humidifiers to eliminate calcium-carbonate dust problems common to these units. This is a dangerous suggestion.*

*The manual which accompanied my humidifier warns in bold print not to use softened water. Because there was no explanation in the manual as to why this caution need be taken, I called a local plumber who told me that, because salt is used in the regeneration cycle of all water softeners, sodium molecules replace calcium molecules in the process. The net result is that your readers will be depositing a much more corrosive dust of salt on their electronics if they use softened water in humidifiers.—Bill Caucutt, Madison, Wisc.*

## Loss of Bass

*Q. I have a problem with two separate systems, and wonder if you've ever heard of this problem. I have a receiver and the usual assortment of accessories. I also have a good boombox. I have used these very satisfactorily over a period of a year or so, and loved both systems. Now, both have much less bass than they did when I first purchased them!*

*Could the power line be responsible for this lack of bass? It's about the only item common to both systems. I often use the boombox connected via the power line, rather than operating it from batteries.—Jimmy Edwards, Greenville, N.C.*

*A. I have not run into a situation like yours. There are situations in which bass has been lost, but I can't recall a time when two independent sound systems suffered from the same condition at the same time!*

*My first thought is that the loss of bass could stem from an increasing familiarity with the sound of your components. On top of that, you may be more critical of sound than you were at the time you purchased your two systems. You may, therefore, expect more than what can be obtained from the equipment you now own.*

*I really don't think the power line could be responsible. If it were, rather*

*than producing a diminished bass output, it would probably have caused your equipment to fail completely. This would have occurred because of surges on the power lines which happened often enough and which were severe enough to produce damage to the power supplies in the two systems you own—or perhaps to produce damage to other components fed by those power supplies.*

*In the case of the portable equipment, could it be that you often stored it in your auto for long periods while the car stood in the hot sun? This could gradually result in deterioration of electrolytic capacitors. If these are in tone-control circuits, emitter bypasses, or perhaps interstage-coupling circuits, bass could be reduced with decreasing capacitance.*

*Assuming that this theory is right, it could be that you have two different reasons why bass was lost. In the case of the boombox, it may have been due to excessive heat. In the case of the main receiver, the loss of bass could be due to any number of causes not related to the portable's problems. The most logical reason has to do with decreased capacitance values. However, it could also be nothing more than that you have relocated your loudspeakers, and that the room acoustics don't support good bass in these new locations.*

## Amplifier Channel Imbalance

*Q. I've read much in your column about channel imbalance. My system appears to suffer from this condition. At low volume levels, the left channel of my power amplifier shows higher power output than the right channel (on its LED display). As I increase the setting of the volume control on my preamplifier, however, the balance between the left- and right-channel displays evens out. I can't hear any imbalance, despite the discrepancy between the two displays. Do I have a problem?—Matt Farley, Shreveport, La.*

*A. Since the balance you hear does not change when you change volume settings, the cause may be differences in the linearity of the two power-level indicator circuits; I have heard of such a circumstance occurring. One quick way to check for this is to bridge your amplifier's two inputs with a Y-connector, so that you can feed both with one*

*input signal. Then, using either output from your preamp, raise and lower volume and see if the indicated channel balance still shifts. This will be easier to observe if you use a steady signal such as a test tone from a CD, test record, or audio generator, or interstation noise from an FM tuner with its muting off. Be careful not to overdrive either your amp or your speakers. Loud test signals can be annoying, so it's best to substitute a dummy load for your speakers, if you can find a suitable one.*

*You can also check the difference in amplifier output levels by connecting an a.c. voltmeter between the amp's two "hot" output leads. When the same signal is fed to both channels, the meter should indicate 0 V.*

*If you heard the balance changing as you raised the volume, then it would seem probable that the two channels of your preamp's volume control did not track together at low volume settings. To double-check, interchange the right and left cables from your preamp to your amp at one end; if the trouble was in the preamp, the amp channel which formerly read low would now read high, and vice versa.*

## Piezoelectric Tweeters

*Q. What are piezoelectric speakers (tweeters), and what are their advantages and disadvantages? Why are these tweeters not used by most loudspeaker makers?—Roosevelt A. Anderson, Jr., Las Vegas, Nev.*

*A. Rather than using a magnet and a voice-coil, a piezoelectric speaker employs a special ceramic material which is used to drive its cone or other diaphragm.*

*You doubtless have heard of ceramic phonograph pickups. These work by virtue of a thin slab of a special ceramic fitted to the stylus. When the stylus moves, this motion twists the slab. When this kind of ceramic is twisted, an electrical voltage appears between its two faces, and this voltage will be in proportion to the modulation on the record grooves.*

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If, on the other hand, voltage is fed into such a pickup, the ceramic will twist in proportion to the strength and polarity of the voltage, and the stylus will move. This system was used as the driver for some recording heads many years ago.

The ceramic could be attached to a diaphragm or cone rather than to a stylus. If sound waves strike the diaphragm, it will move, twisting the ceramic. As you can guess, a voltage will appear across the ceramic slab. (Many microphones have been constructed using this principle.)

Now, put voltage across the ceramic, and it will again twist, causing the diaphragm to vibrate in accordance with that voltage. This is your piezoelectric tweeter.

Because these elements cannot be twisted very much without breaking, they do not lend themselves for use as drivers for woofers or even midrange speakers. But the system works well for tweeters, as you know. The advantages are that, because of mechanical and electrical considerations, piezo tweeters usually can be operated without need for a crossover network. They are voltage-operated devices and thus consume virtually no power from the amp. These tweeters produce a surprising amount of acoustical output and so can be matched with almost any woofer/midrange system.

The disadvantages have to do with a lack of smoothness in their frequency response. To date, I have not heard one which is smooth enough for me to choose as my tweeter. Perhaps this is why most manufacturers don't use these tweeters for true high-fidelity applications. They are very common in inexpensive equipment and in speaker systems which were designed for sound-reinforcement applications.

#### Crossover Networks and Bass

*Q. I bought a rack system a while ago and was not satisfied with the speakers. I bought new drivers. I noticed that the stock speakers did not employ crossover networks—just capacitors for the midrange and tweeters. The new drivers were supplied with capacitors, except for the woofer—still no crossover networks!*

*I connected the drivers, and the overall sound of my system improved,*

*except for bass response. I bought a crossover network and added it to my setup, and the bass response was just as poor as before.*

*Could the lack of bass have to do with the enclosures rather than the drivers or crossover networks? I would like to know of a solution because I'm left with a handful of expensive drivers which are now useless!*—Jeff Nachshon, Brooklyn, N.Y.

**A.** A crossover network won't result in increased bass output from a loudspeaker system. It may smooth out peaks in the region of the crossover frequency, but this is another subject. Its use also assures that low-frequency energy does not enter mid- and high-frequency drivers. Removing these frequencies is essential in many instances because drivers can be ruined by excessive lows.

It is very likely that the enclosure plays a part in the lack of bass response. You can't just "marry" a woofer to an enclosure and get the bass response you expect. You might be lucky, but most of the time, luck will evade you. The enclosure's internal volume, amount of sound-absorbing material, and other critical items will be determined by various parameters of the woofer—such as cone area, cone resonance, and cone compliance. If you are to rescue your woofers, check with their manufacturer for suggestions as to woofer parameters.

If you are unwilling to experiment or to take risks when working with loudspeakers, you should consider purchasing ready-made loudspeaker systems. Of course, even commercially made loudspeaker systems vary considerably in sonic quality from one make and model to the next. It is therefore important to listen to any loudspeaker system *before* buying it.

Listen only to loudspeakers which fit your budget or other requirements, and listen to them using your own music sources. You will be familiar with this music, which will aid you in selecting a "good" loudspeaker. If a pair sounds good, purchase that make and model. They may sound somewhat different in your home than they did in the dealer's showroom; still, you have a better chance of liking the speakers than you would if you walked in and bought them without an audition. 

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## MATRIX 801 SERIES 2

Lewis Lipnick

Since the introduction of the original B&W 801 monitor loudspeaker in 1980, it has been adopted as a reference by several recording studios around the world. Over the past five years, I have seen 801s present in just about every recording session with which I have been artistically involved. While the original 801 monitor had its strong points, I was never satisfied with the detached and muddy-sounding bass, discontinuous driver balance, and low sensitivity. Unless this speaker was driven by an enormous solid-state power amplifier, with an elevated high-frequency response, the tubby and slow bass response often obliterated any detail in the two bottom octaves of musical material.

Well, all this has changed. . . for the better. The new 801 Matrix Series 2 is as different from the original 801 as apples are from oranges. For me to say that this is just another excellent loudspeaker would make me guilty of gross understatement. In short, this is the most musically complete and revealing full-range dynamic loudspeaker that I have heard to date, effectively redefining such terms as coherent, dynamic, open, and involving.

### Technical Highlights

The Matrix 801 Monitor is a large loudspeaker, employing a massive, front-vented cabinet housing the low-frequency driver and crossover network, with a separate fibercrete head housing the midrange driver (the tweeter is mounted in free field above) placed directly atop the bass cabinet. The midrange/tweeter head is electrically connected with the lower cabinet via a short umbilical and an XLR connector, and is secured by a very long bolt that runs completely through the head, down into the bass enclosure. There are two sets of

## B&W 801 MATRIX SERIES 2 PROFESSIONAL MONITOR LOUDSPEAKER

Three-way loudspeaker system. Drive units: one 26mm metal-dome tweeter, one 126mm Kevlarcone midrange, one 300mm high-power polymer-cone woofer. Crossover frequencies: 380Hz and 3kHz. Frequency response: 20Hz-20kHz  $\pm$  2dB free-field. Sensitivity: 87dB/W/m. Nominal impedance: 8 ohms (not falling below 4 ohms). Amplifier requirements: 50-600W. Dimensions: 39 $\frac{1}{16}$ " H by 17" W by 22" D. Weight: 110 lbs. Price \$5,000/pair in black ash or walnut, \$6,000/pair in rosewood. Including external bass-alignment filter. Speaker stands optional, \$200/pair. Approximate number of dealers: 100. Manufacturer: B&W Loudspeakers, Ltd., Meadow Road, Worthing, BN11 2RX, England. U.S. Distributor: B&W Loudspeakers of America, P.O. Box 653, Buffalo, NY 14240. Tel: (416) 751-4520.

speaker terminal connectors on the bottom rear of the bass cabinet, in order to allow the listener to bi-wire the speakers (these connectors are normally internally bridged, so in order to bi-wire, the bottom cover under the bass cabinet must be removed, and two very short jumpers removed. . . a less-than-ideal setup). The cabinet construction is excellent, showing a great deal of attention to assembly and aesthetic detail, except for the quality of the speaker terminal connectors. Rather than utilizing standard five-way binding posts (as B&W does with their less expensive 802 speakers), they have opted for some rather poor-quality, screw-type terminals that just don't belong on a product of this quality. Except for the round port vented on the front of the bass cabinet directly below the woofer, the new 801 Matrix is visibly similar to its predecessor. The casters mounted on the bottom are nice to have when moving these behemoths around the house or studio. But since the speakers really need to be placed on stands in order to operate at full potential, this otherwise practical addition is somewhat useless.

The internal design and components represent a clear departure from the earlier 801. By using their effective Matrix technology of incorporating an internal system of honeycombs within the bass cabinet, the engineers at B&W claim to have reduced low-frequency enclosure resonances and colorations to a significant degree (I agree). Additionally, but using a sixth-order Butterworth alignment through the addition of an outboard equalizer, they have been able to achieve extraordinary low-

frequency response (-6dB at 17.5Hz) without compromising bass attack and clarity. Although the speaker can operate without this optional equalizer (thereby effectively representing a fourth-order Bessel filter with a -9dB point at 19Hz), the addition of this device clearly enhances its overall musical accuracy. The midrange fibercrete head assembly and Kevlar-coned driver remain basically unchanged from the earlier 801. The high-frequency driver (the TS26 tweeter), on the other hand, represents an entirely new design, incorporating a metal-domed diaphragm. This design was arrived at partially through B&W's computer-aided design (CAD), and is a modified version of the metal-dome tweeter used in the less costly Concept 90 series of loudspeakers. B&W claims that this new tweeter "exhibits perfect piston-like behavior to frequencies well beyond audibility." The newly redesigned bass driver has a cone of specially formulated plastic compound, is heavily damped to remove sonic colorations, and employs a 13lb. 13,000 Gauss magnet.

In order to protect the drivers from overload, B&W has upgraded the already existing Audio-Powered Overload Circuit (APOC) by incorporating two such units: one operates on the bass section, the other on the midrange/tweeter, allowing complete protection even when the system is bi-wired.

### Design of a True Monitor: Not Just Another Loudspeaker

While attending last summer's CES in Chicago, I had the pleasure of a lengthy discussion with John Bowers, the driving force behind B&W

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loudspeaker design. His musically intuitive design approach and clearly defined product goals (something too often lacking in high-end audio) gave me the impression that he knew exactly what he wanted to achieve, and how best to do so. When I asked him about the role of monitor speakers *vs* those without such designation, he stated that a true monitor should reproduce exactly what is contained in the recorded material, good or bad, rather than presenting an editorialized picture of what one might want to hear. His point is well taken, since many audiophiles choose their loudspeakers for various sonic attributes that add colorations to effectively create a predetermined spectral balance or acoustic environment. Of course, we all know that such a thing as an accurate loudspeaker does not exist, and even if it did, we would have no way of ascertaining its accuracy unless the recordings were identical to live music. How, then, can anyone claim that they are able to design an accurate loudspeaker? Realizing this problem, Bowers uses panels of musicians who have performed in specific recordings to ascertain musical integrity between originals and facsimiles. If they and the recording engineers involved are satisfied that what they hear through the speakers accurately reproduces what occurred in the sessions, he feels that some of the subjectivity connected with loudspeaker design has been eliminated.

Which brings us back to the 801 Matrix. This is not a speaker for those with preconceived notions of what should be, but for those who wish to hear what is. I have yet to hear another speaker that gives me as much musical information as this one, without any of the usual sonic intrusions that remind me that I am listening to music through a mechanical device. The 801 Matrix is a true musician's reference transducer, a point made by several of my colleagues in the National Symphony who have had the opportunity to hear it. Unfortunately, many of the musical attributes that distinguish the new 801 from other products will probably be lost on those audiophiles looking for the latest trends in loudspeaker design, rather than recreation of recorded artistic events.

### Sonic Qualities

Being a musician first, and audiophile second, I subscribe to the thesis that musical validity and accuracy is of foremost importance, and that sonics should be viewed as only one component within the overall musical picture. There are, however, those few products that utilize their sonic strengths as a means to musical integrity, rather than the more common "let's see how we can make our speakers sound different from anyone else's." The 801 Matrix is one such product; here are some of the purely sonic attributes that set it apart from so many other also-rans.

First of all, I don't feel that this speaker has

any significant sonic weaknesses. It is ruthlessly revealing of everything up front (source material, electronics, interconnects, line-cord polarity, etc.), and this is what might ultimately get it into trouble. Many US dealers who will be selling this product are not members of the high-end community, and will probably mate the 801 with greatly inferior electronics. I can tell you that, after living with these speakers for the past two weeks, anything less than the finest electronics and source material can cause serious listening trauma. As an experiment, I connected a representative Japanese receiver (name not important, since they all basically sound alike) to the 801s, and the results were devastating. The sound was thin, grainy, and white, with no depth or bass extension. And although readers might find this amusing, it really is not—many potential buyers will audition this product with similarly mismatched ancillary equipment, and will very likely blame the speaker for the sonic shortcomings. The people at B&W figuratively "shot themselves in the foot" when pricing this speaker. . . . it is simply too inexpensive for what it does. While it outperforms other products costing at least twice as much, its requirements for the finest electronics will place B&W dealers in a difficult situation.

While the 801 Matrix works well with both solid-state and tube amplifiers, I definitely prefer the results when using solid-state. Although the manufacturer claims that one can use as little as 50Wpc with the new 801, I would think that at least 100Wpc should be the minimum (especially if you are going to play full orchestral material). Of the three amplifiers that I have tried on these speakers (Conrad-Johnson Premier Five, Mirror Image 1 IS, and Rowland Research Model 5), the Rowland Research came out the clear winner. I still think that, overall, the Model 5 is the most neutral and musically revealing amplifier I've had the opportunity to hear, and the 801 Matrix speaker once more confirmed my findings. While the Premier Five presented itself very well, with beautifully defined midrange and silky high frequencies, low frequencies were slightly muddy and indistinct. The Mirror Image was not even in the running, sounding unrefined, raw, and congested. Although I heard all of the above before through my Martin-Logan Monoliths, the differences between these three amplifiers became much more pronounced with the 801s.

The "optional" 11" stands are quite necessary. With the assistance of two professional musical colleagues (Robert Kraft, bass trombonist with the National Symphony, and Joseph Kainz, visiting flutist from Chicago), the 801s were auditioned on the floor, sitting on the attached casters, on the floor with the supplied spikes, and on the dedicated stands. Both floor-mounted positions resulted in loss of ambience and musical information, along with noticeably slowed low- and midbass response.

When we placed the speakers on the stands, the sound magically blossomed, and the spectral balance became neutral and even. Additionally, the contra octave of bass became tighter, deeper, and noticeably faster.

This all happened before the optional outboard bass-alignment filter (aka equalizer) arrived, or the speakers had been bi-wired. Again, B&W's "option" is a necessity. While I liked the speakers before, the addition of this little black box between preamp and power amp made an enormous difference. . . . for the better. This is the first such device I've heard that doesn't adversely affect the midrange and high frequencies. B&W has wisely not included hard-wired interconnects, so the audiophile can still use his favorite brand of wiring. What amazed me was how this gizmo improved the entire sonic picture, not just the very deep bass, as we had expected. The sound became more clear and extended (in both directions), and the soundstage opened up, portraying hall ambience and dimension more effectively. I could more clearly define individual musicians in space, as well as the degree of natural hall resonance *vs* artificially induced reverberation in recordings. Not being an engineer, I won't attempt to speculate on exactly what this "optional" filter does, but one thing is for sure: if you're thinking of auditioning a pair of Matrix 801s, be sure the dealer uses the bass-alignment filter and the stands.

The Matrix 801s should be bi-wired. Although they work quite well in the conventional setup, the balance between the midrange/tweeter and woofer sections is tipped upward toward the former, thereby presenting a slightly lean, hollow quality to the mid-bass that might cause the listener to think these speakers unnaturally bright and aggressive in the upper midrange. When bi-wired (be sure to use the same speaker cable on top and bottom; these speakers are too coherent to tolerate mix and match), everything came into alignment, with all three drivers becoming more transparent and coherent, and any hint of over-brightness completely vanishing. (As an aside, I would like to mention that Straight Wire Music Conductor Speaker Cable appears to sound the best with the 801s in my system.) All of my subsequent critical observations concerning the sonic and musical qualities of the Matrix 801s were made with the inclusion of bass-alignment filter, speaker stands, and bi-wired installation.

The 801 Matrix is spectrally seamless from top to bottom, dynamic, refined, harmonically accurate, open, and, last but certainly not least, revealing. The only other speaker that I have had the opportunity to live with that successfully competes (and I have owned several large speaker systems) is the Martin-Logan Monolith. Whereas the 801 does not always present as large a soundstage as the Monolith, it does appear to present soundstage more accurately. Ensemble and stage size are more

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clearly defined, and what sometimes appears as spatial information through the Monolith is obviously artificially induced reverberation and multi-miked bleed-through with the 801. Perspective is more obvious with the 801: forward, aggressively recorded material can really "come out and grab you by the throat," while the opposite perspective places the musicians well behind the speakers. The 801 is more coherent from top to bottom, more open, more revealing of recording techniques, and much more dynamic. The only area in which the Monolith is the clear winner is transparency: electrostatics just simply do better with dynamic speakers in this category. They are both great loudspeakers (musically exceeding everything else that I've heard, except perhaps for the new Apogee Diva, which I have not yet had the opportunity to extensively audition), each presenting musical information in a valid, but totally different perspective. The Monolith might ultimately be the better speaker for long-term listening, being less analytical, while the 801 gives more of what is really there, albeit possibly a bit intimidating. The 801 is a monitor, and some listeners just might not want to hear everything the 801s will tell them, musical and not.

### Musical Attributes

I was not prepared for what I heard the first time I played the 801s. After finally getting these monsters set up and wired, my colleagues and I sat down to listen to a new compact disc of Vaughan-Williams's *Job* (Vernon Handley, London Philharmonic, EMI Eminence CD; superb performance and recording), having just heard it recently on the Monoliths. We sat silent throughout the entire performance (something that has never happened before), and after it was over, we looked at one another without a word. Finally collecting ourselves, recovering from the initial shock of what we had just heard, someone quietly said, "I've got to have those speakers."

When it comes to audio, musicians are hard to please. Perhaps that's why so many of them have such poor audio systems: if you can't have it all, why even try? The new 801 is a musician's reference; it simply reproduces music with more immediacy and honesty than anything I (or any of my colleagues) have previously heard. It is quite unlike any other speaker, inasmuch as it goes far beyond any previous design in drawing the listener into the performance, almost as if the listener's ears and microphones were one and the same. My first impression of the sound was one of unrestrained openness, along with the sensation that the music was expanding out into the hall acoustically, not being stopped by an artificial barrier such as a loudspeaker. This is something previously experienced by this musician only at live performances, and is one of the things that separates the "life" in live music from the constriction of electronic reproduction. Whereas

many other speakers have given me the impression of seeing the music through a very clean window, the 801 Matrix not only opens this window, but places me outside, actually becoming involved with the musical picture.

The 801 Matrix outperforms every other loudspeaker I've heard in its ability to recreate the wall-bending visceral weight produced by full symphony orchestra, chorus, and organ. Until I heard the 801s, I was convinced that no loudspeaker could credibly reproduce the dynamic impact that I feel during live performances. For the first time, I can sense the massive wavefronts of sound created by full orchestral climaxes, without any timbral change, constriction, or hardness. And at the same time, this speaker recaptures the finest low-level musical details, allowing the listener to see into, rather than just look at, the performance. All other speakers that I've heard to date (except for the Monoliths and Divas) create a "haze" over the music, effectively separating the listener from the performance. This typically causes loss of clarity and immediacy in quiet passages, as well as constriction and "sonic backup" at higher volume levels.

The 801 Matrix does not discriminate between good and bad... it bares all. The non-musical aspects of performance (background noise, instrumental key noise, turning pages, etc.) can really place the listener into the recording session, something made all too clear to us during a playback of Andrew Litton's recent recording of Mahler's First Symphony. We were listening to Andrew's audition copy of the master tape, when a couple of my colleagues detected a bass-drum roll not in the score. When we ran the tape back, and listened again, that bass-drum roll was clearly a rather loud truck outside the hall... something that infuriated Andrew, especially since the sessions had been monitored with a pair of older B&W 801s. According to him, this was not at all audible during session playbacks (and we were only listening to a cassette dub of the master!).

I am also now discovering new tidbits of musical information in many of my recordings that shed new light on the quality of performance. Several recordings, that I had previously thought were musically flawless, have now become less than perfect. In Frederick Fennell's performance of Holst's First Suite in E flat for Military Band, with the Cleveland Symphonic Winds, I have discovered a very soft, but magically effective suspended cymbal roll during the first movement, used by the composer as a precursor to the following snare drum roll. Having not heard this through previous speakers, and thinking that the 801s were producing some aberration, I checked the score, and sure enough, there was the cymbal roll. Another interesting but heretofore unidentified aspect of Fennell's performance came to light with the euphonium solo (introduction of the second theme), also in the

first movement. Before the 801 Matrix, I thought that I heard a tonally vague, not very well played euphonium. But now, I could detect two euphoniums (the score calls for only one... for some reason Fennell opted to double the solo part), which were neither together nor in tune. While this might not be very important, nor of any interest to the average listener, it serves as an example of the low-level musical detail retrieval capabilities of the 801 Matrix.

This speaker's low- and midbass reproduction are the most accurate I've heard so far. While some other products (such as the Infinity IRS, RS-1b, and KEF R107) probably supply more quantities of bass, the harmonic integrity, texture, and overall quality of low-frequency reproduction is considerably more realistic with the 801 Matrix. Edward Skidmore, another National Symphony colleague (double bass) and member of our musicians' audio listening group, flatly stated that the 801 Matrix was the finest speaker he had heard that reproduces the double bass accurately. He went on to point out that the bass does not sound like a low cello, or any other stringed instrument for that matter. According to Ed, each particular bass has its own unique sonic qualities that, until the new 801, had been lost.

The same must also be said for my instruments, the bassoon and contrabassoon. With this speaker, I can not only determine what manufacture of instrument the musician is playing, but the vintage as well (*ie*, the darker, more open and focused 7000 series *vs* the duller, fatter-sounding 10,000-series Heckel bassoons; the lighter, clearer, but less impactful-sounding prewar Heckel contrabassoons *vs* the fatter-sounding, more resonant postwar models). While many other speakers provide the listener with accurate bass attack, no others, that I have heard, reproduce the decay of low frequencies as well as the 801 Matrix. This important information supplies the listener with the harmonic and textural components of low instrumental tonal propagation. Additionally, this helps to define the space in which the performance is taking place, since decay time of omnidirectional low frequencies is one of the key elements in determining the spatial dimensions of the recording venue.

Transient attack of the 801 Matrix, throughout the entire frequency spectrum, is the most musically accurate and coherent of any speaker I have heard (except for full-range electrostatics). Deep-bass transients are remarkably clear (but not artificially dry), an attribute made evident through the reproduction of the bass drum in the third movement of Frederick Fennell's First Holst Suite (same as above). While many other full-range speakers have provided me with lots of window-rattling bass response, the 801 Matrix was the first to delineate the type of beater the bass-drum player was using. Whereas I had previously

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been aware of unusually sharp bass-drum attacks in this recording. I could now definitely determine that the instrument was being struck with a wooden bass-drum stick wrapped with chamois (a trick sometimes used in order to get more immediate attack), rather than the more usual felt beater.

The qualitative differences in attack speed between cello and double bass, bassoon and contrabassoon, bass and tenor tuba, bass drum and tympani, trumpet and flugelhorn, oboe and English horn, flute and piccolo, and violin and viola, are clearly delineated. I can also detect the amount of energy (weight of bow on the string, and amount of air support behind the tonal attack in woodwinds and brass) being expended by individual musicians within an ensemble. This effectively gives the listener a more immediate, rather than vicarious view of the performance (as one of my colleagues so colorfully stated, "this is like having sex, rather than watching it").

The 801 Matrix also sets new standards for instrumental and vocal harmonic integrity. Differences between American- and German-manufactured Steinway pianos are clearly discernible: the former are more immediate and bright at the two frequency extremes, with a slight suckout in the middle registers; the latter have a more even, resonant, but less brilliant and forward quality. The slight harmonic differences between the bright, forward-sounding trumpets vs the darker, more covered cornets in Berlioz's *Symphonie Fantastique* are clearly evident through the 801 Matrix—the first speaker I've heard to successfully make this distinction.

And while I'm on the subject of brass: these instruments played at high volume levels create sonic distortions, caused principally by nonlinear ringing of the actual brass material (especially in the flared bells). Played *en masse*, combinations of french horns, trumpets, trombones, and tubas create "difference tones" and beat frequencies that add brilliance and character to the overall orchestral sound. The same holds true for large pipe organs—beat frequencies created by slight harmonic and atonal discrepancies between the various ranks add interesting coloristic effects to the overall presentation. The 801 Matrix is the first speaker that I've heard that can actually reproduce these harmonic phenomenon, effectively contributing to the overall sensation of reality.

Vocal reproduction, both solo and ensemble, is superb. This speaker will, however, accurately portray voices too closely miked; the excessive sibilance in hotly EQ'd pop selections can drive you out of the room. But when the source material is more neutral, the intensity and hard kernel of vocal resonance is remarkably well reproduced. The specific characteristics of different vocal *lessitures* are, for the first time, as apparent as in live performance. The nasal, forced quality of sound indigenous to the tenor sections of many choral

groups, as well as the usual flat-sounding, unsupported sopranos, are clearly evident. Text in all vocal music is well delineated, without any unnatural sibilant emphasis. The 801 Matrix can even unravel the most complex voice leadings found in multipart contemporary choral works.

String instruments produce very different harmonic tonal structures when played with and without mutes. In live performance, muted massed strings produce a covered but resonant carpet of sound (*ie*, the opening of *Symphonie Fantastique*), and until the 801 Matrix came along, I had not heard this accurately reproduced. Most speakers represent this effect as a hushed "buzz" lacking pitch center and tonal focus. But the 801 Matrix lets all the resonance, tonal warmth, and pitch definition come through.

And speaking of pitch definition, this is where most speakers fail miserably. Instruments and voices have (or should have) tonal centers that are clearly heard in live performance. But so many speakers scramble this, representing tonal pitch centers on either the high or low side of the sound, producing overly bright or dull sonic distortions (overly sharp pitch appears to the ear as brighter; low pitch as duller). And with most speakers, this pitch distortion is not consistent: characteristics change with each separate driver, causing frequency-related colorations (this is one advantage of full-range electrostatics). The 801 Matrix is dead on, giving the listener a completely undistorted view of pitch focus and intonation, regardless of instrumental range or vocal *lessitura*.

The new 801 also allows the listener to follow individual instrumental and vocal lines into and through complex passages. This is not achieved by artificially boosting the upper midrange or high frequencies (as some other products do), since it remains consistent for instruments through the contra octave of bass. Compared with the 801 Matrix in this area of musical reproduction, most other dynamic loudspeakers sound unclear, congested, and amorphous.

Everyone who has heard the 801 Matrix Monitor has unconditionally stated that they hear more music than ever before. Some have felt that they hear too much, and would rather be left a little more in the dark. I don't. But it's interesting to note that, ever since my musical colleagues first heard the 801s, the topic of discussion during rehearsal breaks and concert intermissions at the National Symphony has revolved around "those fantastic new speakers that Lipnick has." I even overheard a few of them muttering something about how they could try to justify buying a \$4500 pair of loudspeakers.

### Shortcomings

As I mentioned earlier, this speaker has no major shortcomings *per se*. However, since it is

so revealing of source material and ancillary electronic weaknesses, the upper midrange and lower high frequencies can become a bit much. Compact discs that suffer from excessive digititis, as well as those electronics that contain enough grain to build a beach, will be unlistenable on these speakers. For those reasons alone, I cannot understand why the B&W engineers have deleted the environmental balance control on the rear of the midrange/tweeter head assembly that was standard with both the earlier 801 and 802 speakers. This control effectively allowed the listener to attenuate or boost the mids and highs according to personal taste, room acoustics, and associated equipment. Although it might be cheating, in some cases a slight degree of lost clarity may be preferable to an ear bleed, and might also make this product more saleable to people with less than perfect ancillary equipment.

My other reservations are strictly practical. The very awkward procedure required to disconnect the bridge inputs for bi-wiring is unnecessary. There must be a better way. And those horrible input connectors really should be replaced with something more consistent with a product of this caliber.

### Conclusion

In my opinion, the B&W 801 Matrix Monitor represents the pinnacle of current full-range dynamic loudspeaker design. It does not have the "see-through" transparency of the best electrostatics, and can sound forward and hard. Because it is so ruthlessly revealing, it may not be the speaker for everyone. But it is the first such product to convince me that it might eventually be possible to accurately reproduce live music. Do not audition this speaker with anything less than the finest source material and electronics—you will be wasting your time. And as good as this speaker is, I am sure that there are plenty of lunatic-fringe audiophiles who will find it unexciting and boring. So be it. But if you are searching for the emotional involvement only live performance can provide, and are willing to live with absolute sonic honesty, then the B&W 801 Series 2 Matrix Monitor is, musically, the end of the road. **S**

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**801**  
S E R I E S 2

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# TAPE GUIDE

HERMAN BURSTEIN

## Suitable Tapes for Hi-Fi VCRs

*Q. I recently purchased a Hi-Fi VCR which will be used for audio as well as TV recording. Is it necessary to use tapes designated "Hi-Fi" for high-fidelity audio recording?—Bill Dormer, Brooklyn, N.Y.*

A. It is not necessary to buy VCR tapes labelled "Hi-Fi" for the purpose of high-fidelity audio recording. However, you should buy tapes of good to excellent quality in order to minimize dropouts and the consequent deleterious effect on the audio signal. Stay with the name brands for this reason and to avoid possible malfunctions.

## Pause Mode

*Q. Is there any harm in leaving a cassette deck in pause mode for a long period, such as one-half or even one hour? What is happening in the pause mode? Are any parts moving? Is the tape in contact with any moving parts? Is anything, including the tape, wearing out?—Edward J. Gardyan, Melville, N.Y.*

A. Leaving a tape deck in pause mode for about one-half to one hour is unlikely to do any harm. Usually, the capstan keeps turning in this mode, but the pressure roller and heads are moved away from the tape. On the other hand, it is probably inadvisable to leave a deck in pause mode for extremely prolonged periods of time because this contributes to the aging and eventual failure of electronic and mechanical components that remain switched on unnecessarily.

## Mysterious Erasure

*Q. In 1987, I purchased a new cassette deck and made about 150 recordings from phono discs, using high-quality tape. They sounded beautiful. Being aware of magnetism as an enemy of tapes, I stored them in a wooden wall rack—safely away. I thought, from metal, speakers, etc. But over the next couple of months, the tapes were all ruined because most of the sound was erased. I looked in the attic to see if anything of a magnetic nature was behind the wall. There was nothing of the sort. While a light switch is about 3½ feet away, there are no electrical conduits behind the wall rack. A hot-water heater is behind the wall, several feet to one side of the*

*rack. Could this, or a water pipe several feet away, affect the tapes? What about a hair dryer used in the next room and 4 to 5 feet away? What about the air-conditioning unit 10 feet away? A motorized wheel chair is never closer than 5 feet. What do you think could have erased my tapes? How far from a speaker, a TV, or a receiver should tapes be kept?—Wally Dutko, Rolling Meadows, Ill.*

A. From my own experience and from everything I have learned from authorities on the subject, about 3 inches is sufficient to protect tapes from all but the very most powerful magnetic fields, such as those produced by industrial lifting magnets. A distance of 1 foot provides ample margin of safety. Therefore, I am very puzzled by your experience. If you had a magnetometer (such as Model 20/B5, made by R. B. Annis Co., 1101 North Delaware St., Indianapolis, Ind. 46202), you could check for the presence of an unsuspected strong magnetic field where you store your tapes.

Does anyone besides yourself have access to your tapes? Has anyone been cleaning in close proximity with a hand-held vacuum? I don't seem to be able to come up with other possible explanations. Perhaps some *Audio* readers can suggest something.

## Head Demise

*Q. How can I tell when the heads in my tape deck are shot?—Gary Salituri, Plattsburgh, N.Y.*

A. Head failure is usually a matter of gradual deterioration, rather than sudden demise, and sound quality is the most common telltale for head wear. It is also likely that, if your deck has separate record and playback heads, the playback head will be the first to go. The sign is a drop in treble response, caused by widening of the gaps. However, poor treble in playback may be due to factors other than a wide gap. The head may just need cleaning and/or demagnetization, or it may only require azimuth adjustment. If heads appear substantially grooved by the tape, this may suggest the need for replacement, but performance is the true test. If you can see the gaps of the playback or record/playback head with the naked eye, replacement time is here. The sure way to check is with instru-

ments that allow you to measure frequency response and distortion, provided the heads have first been cleaned, demagnetized, and azimuth-aligned. In general, if your deck still appears capable of as faithful reproduction as ever, head replacement is not indicated.

## Tape Deck Durability

*Q. I am trying to choose among several tape decks—in good part, on the basis of which one will give me lasting good performance.—Walter Tchuk, New York, N.Y.*

A. One clue to durability is price; another is reputation. Perhaps the best clue may be obtained from service shops. They know which decks, relative to the number sold, come in most frequently for repair. Possibly you can contact an audio service technician and ask him to "open up."

## Too Much Treble

*Q. When comparing recorded material with the original, I notice a slight emphasis of the high frequencies, which leads me to believe that the bias is not correctly adjusted for the Type II tape I am using. The schematic diagram in the owner's manual shows a variable resistor in the bias circuit. Can this resistor be adjusted to obtain proper bias for my tape? Are any other changes necessary?—Peter Smith, New Hope, Minn.*

A. Yes, insufficient bias could be responsible for your excessive treble, and if you have correctly located the bias resistor, you can turn it slightly in the direction that increases bias. If the manual doesn't clearly indicate the proper direction, you will have to use trial and error. Carefully note the original setting of the resistor before adjusting it, so you can always get back to where you started, if necessary.

Factors other than bias could be responsible for your problem, though, including improper equalization in recording and/or playback. You may have chosen a tape which requires more bias than other Type II tapes. **A**

**If you have a problem or question on tape recording, write to Mr. Herman Burstein at AUDIO, 1515 Broadway, New York, N.Y. 10036. All letters are answered. Please enclose a stamped, self-addressed envelope.**

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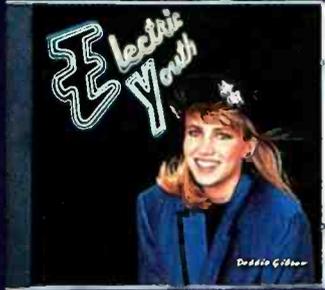
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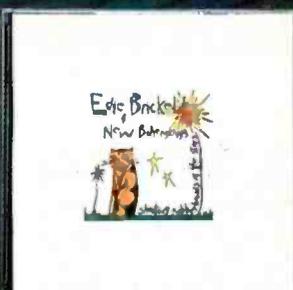
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## THE BARON FROM KANSAS

*Buck Clayton's Jazz World* by Buck Clayton, assisted by Nancy Miller Elliott. Oxford University Press, 256 pp., hardback, \$19.95.

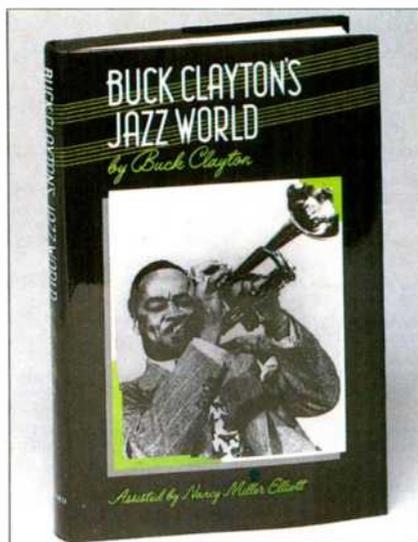
Although trumpeter Buck Clayton was born and raised in Parsons, Kansas and first heard some of the fabled Kansas City bands in the late 1920s, it was in Los Angeles that his musical career blossomed, and he would go all the way to Shanghai before settling in as one of the stars of the Count Basie band.

As recounted in this autobiography, Clayton slowly worked his way up from small to big bands in the burgeoning Los Angeles music scene of the early '30s. He thought he had arrived when handsome, urbane impresario Earl Dancer, one-time husband of Ethel Waters, maneuvered his way into ownership of a lavish new nightclub and hired Clayton to be in his big band. With Dancer, Clayton and the other bandmen appeared in movies with Ginger Rogers, Jack Oakie, and other stars, but Dancer was a gambler and eventually lost the club.

Stranded without work or any visible future in the Depression, Clayton and the others knew their band was just too good to dissolve. Clayton was elected leader, and under the auspices of a wealthy radio chain owner, the band was booked for lengthy tours up and down the West Coast. This led to a chance opportunity to audition for the veteran jazz pianist Teddy Weatherford, who had come over from Shanghai to find a band to play on location at a fancy nightclub and dog track owned by Chinese interests. Weatherford chose the Clayton group, billed as The 14 Gentlemen of Harlem, and they went to work on a two-year contract at the Canidrome. The band was highly successful there, but the job was brought to an end over a racial incident which cost the band its exclusive contract. Six months later, they were back in Los Angeles, reorganized with players like Herschel Evans and Red Callendar and working at Frank Sebastian's Cotton Club. Stories are told here about the fabled Sebastian, who kept Lionel Hampton on standby as house drummer no matter whose band was on the stand, of an early marriage which should not have taken place,

and of an offer from Willie Bryant in New York to join his band in 1936. Clayton wanted to take his own band to New York but the musicians resisted, so he elected to come East with Herschel Evans. First, however, he decided to see what was happening in Kansas City, and the rest is history.

After jamming at the Reno Club, he realized how great the differences were between what he had been used to and this high-powered, ultra-rhythmic brand of jazz. Quickly he forgot about California, forgot about Willie Bryant in New York, and squeezed himself onto the postage stamp-sized bandstand at the Reno with Count Basie's Barons of Rhythm.



*Buck Clayton's Jazz World* gives us many early details of the Basie band, the difficulties they had to overcome when expanding to play Chicago's Grand Terrace Cafe, and how, man by man, the unit came together until they caught fire on New York's 52nd Street in 1938. Clayton played a major role as soloist and, increasingly, as one of the band's key arrangers, until he went into the Army in 1942. Serving nearby in New Jersey or out on Long Island, he was frequently able to come in to record or to sit in at various clubs.

After the war, Clayton led groups of his own, toured with Jazz at the Philharmonic, went to Europe regularly, and in general seemed to lead a charmed life—almost always working and often recording. Unfortunately, he suffered irreversible damage to the

nerves inside his lip and was forced to stop playing, about 10 years ago. Undaunted, he has maintained his career, teaching and working on this essential autobiography. Highly recommended.

Frank Driggs

*Dick Todd: King of the Juke Box* by Sheldon O'Connell. OLB Jazz Books and Records, 155 pp. (illustrated); paperback, \$7.95 plus \$1 postage. (Available from OLB, Box 2663, Providence, R.I. 02907.)

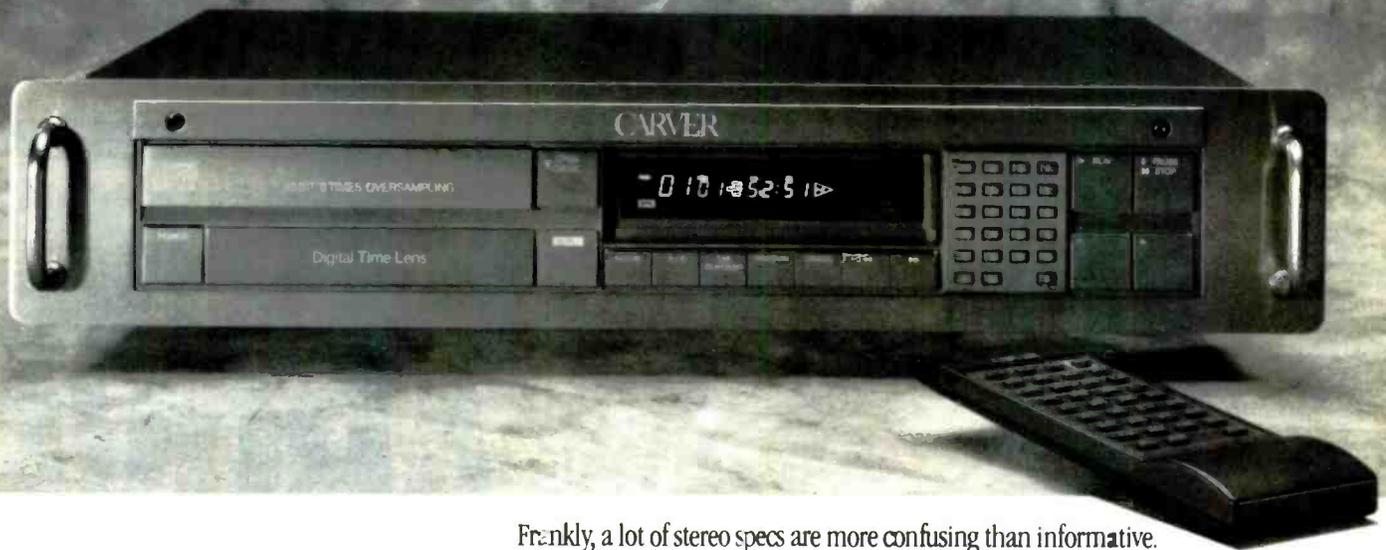
The result of several years of hard research, this privately published book by veteran writer Sheldon O'Connell examines the life and times of one of Canada's biggest singing stars. It is a sound study of an artist who succeeded perhaps too easily—and later disappeared off the face of the earth.

Author O'Connell, who has written extensively on entertainment, delves deeply into the beginning of Dick Todd's career. It began casually in Montreal in 1931, when 17-year-old Todd convinced the manager of Ogilvy's Department Store that his customers might enjoy hearing Todd sing Christmas carols. A year later, he was singing with George Sims' band at Belmont Park, and by 1933, he was broadcasting with Canada's leading orchestras over the network station CFCF.

Over the next few years, Todd's career took off to such an extent that, in 1938, he was offered a contract with RCA Victor's 35-cent Bluebird label. Many of the more than 200 sides he cut in the next four years were "cover" records of Bing Crosby. Decca's major star Todd, without any conscious effort to imitate, sounded remarkably like Crosby.

With "Gaucho Serenade," his hit record of 1940, Dick Todd was dubbed King of the Juke Box. He was signed to make movie shorts in New York and in Hollywood, where directors told him to lose weight. Even after he dropped more than 30 pounds, Todd was told he still looked like a wrestler. It didn't matter, because by this time he was broadcasting with Larry Clinton, Glenn Miller, and Artie Shaw on network radio programs and earning big money. An established star, he volunteered for the armed forces in 1942 and spent the

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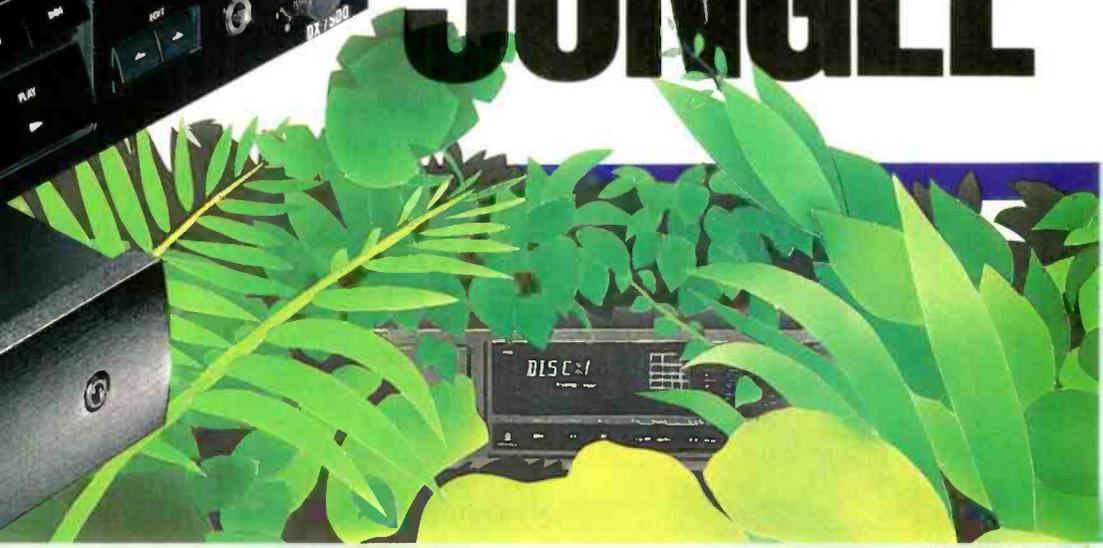
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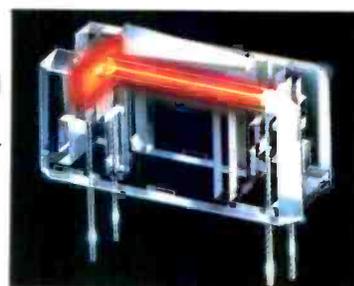
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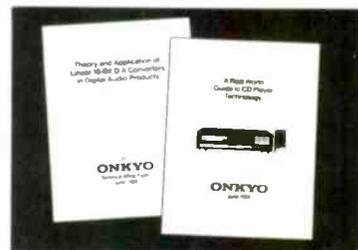


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Author Sheldon O'Connell has shed much light on the life and times of Canada's brightest pop star of days gone by—Dick Todd.

next three years touring service camps in the U.S. and abroad.

When he returned to New York in 1945, he did not renew his contract with RCA Victor but began freelancing for a number of independent companies. He also signed an unprecedented five-year contract to replace Law-

rence Tibbett on the *Lucky Strike Hit Parade*. When the show's format changed in 1946, his contract was bought out. He continued to appear on radio and early TV programs, and in 1949 signed with Rainbow Records, which released his best-selling record, "Daddy's Little Girl."

Just when he should have enjoyed his biggest success, Dick Todd began to miss engagements and occasionally conducted himself in a less than professional manner. A long-time heavy drinker, he had managed, until the early '50s, to handle his problem better than most.

Decca recorded Todd from 1952 through 1954, but a year later, his singing career was over. He hired on with the Barnum & Bailey Circus as a performer and roustabout, then drifted to smaller circuses and carnivals, working as a barker, roustabout, and occasional horseback rider. In 1958, he attempted, unsuccessfully, to revive his singing career, and then managed to get into the stagehands' union.

In 1969, there were two more Decca recordings. One, "Pennsylvania Turnpike I Love You," was very popular with the trucking industry and showed that, even then, Todd still had a robust voice. But no further work resulted. After a short while, he even left the stagehands' union.

In 1972, I met Dick Todd by chance, in a hospital where I'd gone to interview another singer. Todd's once muscular body was now terribly disfigured from arthritis, but despite his condition, he proved to be the soul of courtesy and granted me a wonderful interview. It was the last one he ever gave; a week or so later, he disappeared, and to this day, no one knows whether Dick Todd is dead or alive.

Todd had the talent and appearance to become a major star, but RCA had not served him well by giving him a great many poor songs to record and weak arrangements—even on the good songs. Author O'Connell thinks Allan McIver, Todd's arranger in Montreal, may have been responsible, since he did many of the dates. Also, RCA's Leonard Joy, who supervised most of the sessions, was nearly deaf at the end of a lengthy career in the music business. And perhaps Todd himself lacked that basic competitive drive to be successful in such an extremely tough business.

Whatever the ultimate reasons for Dick Todd's professional demise, Sheldon O'Connell has shed much light on the life and times of the brightest pop star of Canada's yesteryear.

Frank Driggs

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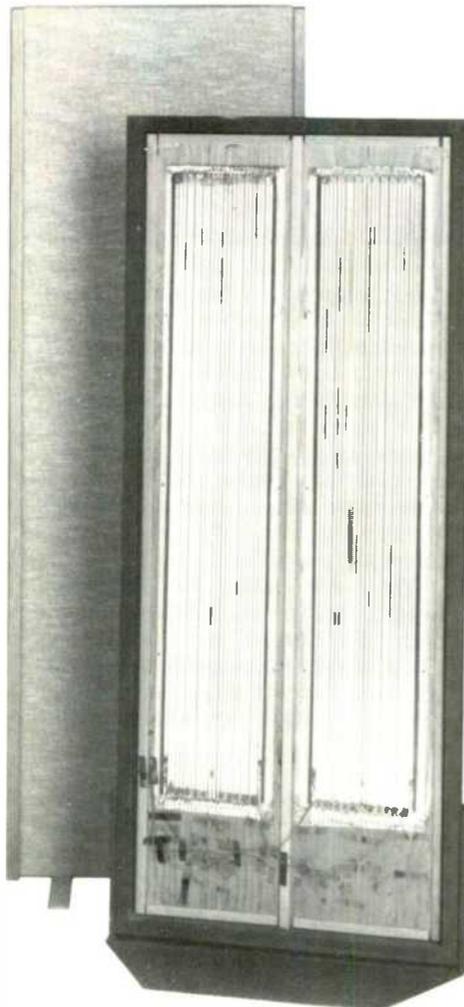
Stereo Factory, Thornhill, Ontario

Sound Plus, Vancouver, B.C.

Whitby Audio, Whitby, Ontario

Advance Audio & Video, Winnipeg, Manitoba

Studio 1006, Montreal, Quebec



The original Magneplanar\* prototype in foreground (utilizing aluminum foil strips on a mylar diaphragm).

## TROUBLE FORTE



**H**ere's the latest bit on my current favorite theme, audible (audio) history in microcosm. On the macro scale, audio history (historical sound) is more and more obviously the biggest revolution ever in historical civilization since, maybe, the invention of printing or, earlier on, the written document. In micro, audio history is mostly fun and games but always with what we must call a Larger Significance.

Just recently, I was approached—that is the word for a loud and commanding phone call—by the local First Lady of Do Good in our small Connecticut town. She is famous for grabbing everybody within reach for every imaginable sort of public-spirited project—all of them extremely useful and none of them popular because, of course, they take time and effort. Here, like everywhere else, we are mostly miserable skunks when it comes to performing public works. All but a handful of us will do our best to keep from getting involved. We need a gadfly, then, and we have one.

It's her *métier* and always has been. Her husband's family is one of the oldest and always dominant; they practi-

cally ran the town and indeed once owned large parts of its land. They still are active in everything and benevolently feel that, along with two or three other old families, they are the town and, accordingly, must assume many of its responsibilities. Nobody disagrees. Highly educated people but also plain New England dirt farmers, all at the same time. An admirable breed! A phone call from that source is a royal command.

When she called me and I answered, the phone jumped. She is loud. "Ed Canby!" she proclaimed. "The Cornwall Historical Society needs help, and I know that you are the ideal man for it." ("No—No!" I screamed internally.) "Could you do some work for them?"

Now, this organization is no Smithsonian. We are a really small town, even if 100 miles from The Big City, whose wealthy have already invaded us with local extensions of their New York apartments for weekends. The Historical Society once occupied the tiny balcony of the auditorium in our town hall, for lack of any other space to house its several yards of exhibits, more or less. (This, alas, ruined the acoustics of

what had been an excellent small concert hall, though never so intended.) Then one of the old town residents left a house on the quiet main street, once farm, to the Society. Last time I was there, quite some time back, the house was scarcely changed from ancient farm days, with a redolent 19th-century smell of old quilts, wood stoves, and kerosene (coal oil to you) and with nearby barns for horses and cows and chickens. Inside was a collection of odds and ends, flea-market style—farm tools, railroad parts, old faded signs, handmade nails, ancient clothing, and so on—also lots of faded photos. No doubt in the closets there were fat manila files of letters and documents, assorted and probably uncatalogued. Work in progress. A real rural museum. What in heaven's name could I do in such a place? All this went through my head in seconds. Good Lord, I've only been around here some 65 years—an out-of-towner, even a New Yorker—and how could I cope with such a mustiness of strictly local lore?

"Oh," said the loud voice, "we have some recordings, some tapes. And we knew you were just the person to help us! Aren't you a—what is that thing, an audition engineer? No, I don't mean that, do I? Audibility? Well, some word like that. Anyhow, I know you are an expert on hi-fi."

That was a term she knew. Her children's and grandchildren's houses are full of it, not to mention their pickup trucks and off-road vehicles. Plus a Walkman for every pair of ears. Okay then, if not audio, hi-fi.

A very tiny gleam began to show in the far corner of one of my eyes, the one just operated on for cataracts. Tapes? What tapes?

She really didn't know what tapes. (Not for her to fuss over petty details.) But these were tapes of old Cornwall residents—all about what they remembered. And nobody could play them anymore. What they needed were cassettes, so they could use them like a library for anybody in town. Everybody knows about cassettes. Could I make cassettes?

Well, I *could* make cassettes, after a fashion—depending, of course, on the source, unidentified. Yes, she knew they were on flat reels. Size? Speed?

Illustration: Zita Asbaghi

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# ARMY RESERVE

Local historical societies are often just a collection of musty odds and ends, but old recordings can be a lot of fun.

Tracks? These matters were blanks. At this point, I do have two elderly cassette machines, neither working properly. One was the very first high-level "hi-fi" cassette machine ever put on the market, if I am right—the Advent. It lacked all sorts of now-needed features, like a 'phone output to hear what is going on and a pair of meters for its two channels (it has that higher-of-two-signals single meter, a system I have always disliked for any recording purpose whatever, cheap or expensive). The Advent motor runs continuously and noisily on a.c., which shows how old it is, and all its controls are non-standard, as per today. No fault for the original! And both its recording channels still work. But the sound quality is really not up to what I needed, as it happened. The other machine was an excellent JVC battery/a.c. pro portable, later vintage. But one recording channel was dead or, rather, kept dying and reviving. Two-head, so when it died, you never knew.

So, I was intrigued but, with another operation looming uncertainly (surgical again), I had to refuse and managed to tell the lady so. She thanked me ever so much, and loudly—the phone positively jangled. She is not accustomed to being turned down.

Next day, I began to feel a creeping bit of conscience. This was, after all, right in my own interest. And it was a thing I just might be able to do, and perhaps nobody else around. Oughtn't I at least to give it a brief try—just a sample? When I called, the lady almost jumped out of the phone at me, and in minutes her car drove up my driveway and there was a tape in hand. Triumph! (For her.) In response, I grinned with a sickly pallor. No doubt there were 259 other tapes piled up in a closet in that old farmhouse. But at least I would see what I could do with one of them.

Two whole days later, I delivered not one, but two cassette copies of that tape, as a sample for the Historical

Society. One was on two tracks, out of the Advent in mono mode. Not very good: It couldn't take the enormous peaks, but more of this in a moment. The other was only one track, and thus one ear via headphones. Much better sound, but I could not get onto the second track. I understand they were delighted, but I surely wasn't. I may not be an audio engineer, but I tend to get thoroughly involved and do my best, at any length, when I use what equipment I have on hand. The JVC pro portable is going to have to be fixed—but I do not trust the nearest local repair shops, a dozen miles away in a small city. This isn't the kind of equipment they normally see, after all. So it's back to New York and an authorized shop. I knew I had let myself in for trouble.

But also, I'll have to admit, for a lot of fun. I enjoyed every moment of this crazy, zany tape, amateurish to the point of the preposterous. I roared with laughter at numerous incredible places, and I got to love the old people



**T**he search for the ultimate sound system inevitably leads to speaker systems employing electronic crossovers ahead of the amplifiers, since this places the individual drivers under much more direct control than is otherwise possible.

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As in my own earlier people recordings, the folks in those days kept making asides, as if the mike didn't hear.



who tried so hard to express themselves for undying (audio) history. But first I had to find how to play it. No information whatsoever—just tape, on a 7-inch reel. I doubt if the interviewer, way back in 1969, even knew what a "track" was or what speed she used. She pushed "On" and stuck the mike out in the direction (generally speaking) of the old people who, I suspect, had never seen a mike before nor knew what it was.

Have you ever tried to identify the track and speed info on an unknown tape? It can be surprisingly difficult if you must be sure. I put this tape on my big reel-to-reel Teac and found, at least, that it ran 7½ ips, which was rather surprising, much common reel-to-reel being at 3¾. So I could at least play it. But was it full-track, two-track, four-track, recorded one way, both ways, on one or both stereo channels—mono or stereo? On an amateur tape, this is often very unclear, what with wildly jumping levels, long si-

lences, differing segments on different parts of the tape, and so on. Suffice it to say that, with two-track and four-track playback choice, I finally deduced that the good lady interviewer had a real oldie machine—two-track mono at 7½ ips, the format pioneered by the very earliest portable, the Ampex 600. The lady evidently didn't know about the second track, the other way back. She used only one track. That had to be split to feed the two cassette tracks, and do I hate making up cables for that! My Advent had a mono switch, to combine two incoming channels, but the later JVC portable did not. By the time it was designed, there was no longer any interest in

mono recording via a two-channel machine. Why bother? So in the end, I'm going to have to get out the soldering iron and make up an improvised two-input "Y" from one source track on the Teac to two on the cassette. I knew I'd get myself tangled up in this project.

We'll, in conclusion, you must accept my written description of some really spicy audio history. Just shows what unexpected things can turn up in any sort of historical document.

This tape was marked "Mr. and Mrs. Charles Parent, Torrington, Connecticut, 1966." Nothing more. You start it from the beginning—right speed, track, volume (more or less)—and you hear about five minutes of vague clunks and rumbles, nothing more—then a loud bang (some switch?), and a stentorian voice, peaking horrendously (I grabbed the Teac volume control), announces an interview with Mr. and Mrs. Charles P., who will now announce their names. Then the same voice, at a lower level, says, "Go

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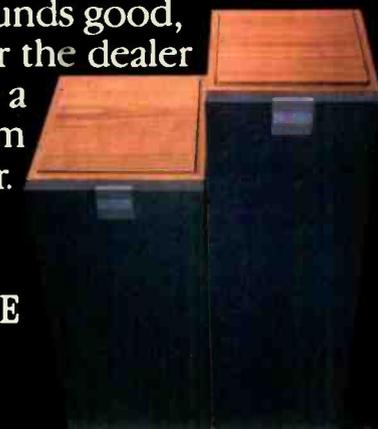
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I learned from the tapes that in the late-19th century, the local accent here was utterly unlike today's. Is *that* history?

ahead, Mr. Parent." Silence. Finally, a very faint male voice in the background says doubtfully, "What'll I do now? Whatchou want me to do?" "Just tell them your name," says Ms. Interviewer at enormous volume. "Wha...Wazzat?" says the faint voice. "Just say your name for the people."

(What people??) "You want my name?" even more faintly. Then suddenly, "CHARLES PARENT," practically bursting my eardrums—an overload blast such as you cannot imagine! Then, again very faint, "Wuz zat all right? Did I do it right?" All oblivious to the mike and proper mike distance.

As in my own earlier "people" recordings, folks in those days simply had no idea of a microphone's workings, to the point where they kept making asides and side comments directly into the mike, as though it didn't hear. Then they would make a set speech—as though turning it on—and another side comment like, "Was that all right?" before you had a chance to touch your controls.

These two old people, the Charles Parents, were in their 90s and, it quickly became apparent, almost totally deaf. This meant that the interviewer, after her stentorian questions, would have to lean over and repeat them in the old folks' ears, which she did, followed mostly by non sequiturs. Mr. Parent just couldn't hear, or maybe the mind didn't connect.

"Now, Mr. Parent, how about that sawmill up in the pines—did you work there?" "Yeah, heh-heh [he had a charming chuckle], them cheeses went into a lot of boxes..." "But Mr. Parent, the sawmill in the pines...?" "Oh, the Corn'll poines? I think there was a sawmill up thar. Yeah, old man Marsh and John C'houn [Calhoun] build it." "Did you help?" "Yeah, them cheeses—pineapples, I think they wuz. Dunno who made 'em..." Then, five minutes later, suddenly the old guy would speak right out: "Sure, I helped build that sawmill (this being around 1870), lumber at one end, gristmill in the middle, and a cider mill out back." His brain sort of caught up slowly. I found him really delightful and learned that, in the 19th century, the local accent here was utterly unlike that of today, and very much like those of far-northern Vermont, as of a later date. Is *that* history?

His wife, Mrs. Parent, was clearer in mind and, it seemed, better educated. In her half, she came forward to the mike resolutely and stated, ever so clearly, "My name is Sophie Liner, and I am 95 years old. I was born in Cornwall Bridge, Connecticut, in 1871. I had three sisters [names given] and three brothers, and I went to the Puffington School." Wow—imagine it! This lady was born six years before the tin-foil phonograph was invented, and here she was talking straight to me in my own house. Don't tell *me* audio history isn't important. 4

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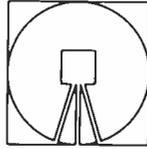
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# the *Soundcraftsmen* STORY

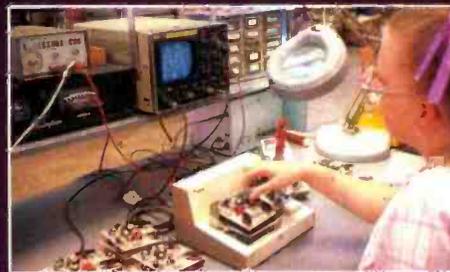


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BERT WHYTE

## HALL MARKS II



The U.S. is not overly endowed with good concert halls, nor are many of them suitable for making good recordings. Our two most famous halls are Carnegie Hall in New York City and Symphony Hall in Boston. Unfortunately, because of the noise from the subways that regularly run beneath Carnegie Hall, among other reasons, very little recording takes place there. On the other hand, over more than 60 years many recordings have been made in Boston Symphony Hall.

The famed acoustics of Carnegie Hall, built a few years before Boston Symphony Hall, were a matter of happenstance. Boston Symphony Hall, opened in 1900, was the first concert hall in the world whose design relied on the use of scientific acoustic principles. Those principles were formulated by Dr. Wallace Clement Sabine of Harvard University.

In December 1987, well-known acoustician Leo L. Beranek, who has had a very close association with the Boston Symphony Orchestra, including service as Chairman of the Board, took the Boston Section of the Audio Engineering Society on a tour of Boston Symphony Hall. Dr. Beranek covered many of the historical aspects of the

hall, explaining construction details and what effect they had on its acoustic properties. The November 1988 issue of the *Journal of the Audio Engineering Society* presented a transcript of Dr. Beranek's remarks on this tour. This detailed account and its accompanying photographs make fascinating reading. Much of what follows is derived from that article, including direct quotes from Dr. Beranek. Without in any way denigrating his presentation, I have taken the liberty of commenting on some of his remarks, which other acousticians may find controversial in nature.

By way of background, Leo L. Beranek was one of the founders of Bolt Beranek and Newman, well-known Boston acoustical consultants. During the years he was active with BBN, Beranek regularly attended AES Conventions, where it was my pleasure to chat with him about acoustics and recording. I would gently "needle" him for the ongoing acoustic problems of New York Philharmonic Hall (which he had designed). As many know, Philharmonic Hall was stripped down to the bare walls and, with the generous gifts of Avery Fisher (for whom it was then renamed), reconstructed according to a design by eminent acoustician Cyril

Harris. Avery Fisher was kind enough to invite me to inspect and observe the hall when it was under construction, so I am quite familiar with the materials and procedures which contributed to the acoustics of this hall.

Founded in 1881, the Boston Symphony Orchestra played the first 19 years of its concerts in what was known as the Music Hall, which had been modelled after the famous Gewandhaus in Leipzig (in what is now East Germany). When the City of Boston decided to tear down the Music Hall (though as it turned out, they never did), the orchestra's founder and patron, Henry Lee Higginson, resolved to build a new and larger hall.

At Harvard, where, a few years earlier, the Fogg Art Museum had been built, the museum's original building had an auditorium in the form of a cylinder. It had such bad acoustics that lectures given there were largely unintelligible. Harvard's president, Charles William Eliot, went to the Physics Department for help, and the assignment was given to an obscure assistant professor, Wallace Sabine. By dint of some original thinking in respect to room volume, absorbent materials, and reverberation time, Sabine worked out his classic equations for calculating reverberation and absorption coefficients. Sabine succeeded in making the offending auditorium useful, and a grateful Eliot recommended to Henry Higginson that Sabine be commissioned to undertake the acoustic design of the new concert hall.

Higginson had earlier hired the architects McKim, Mead and White. After a year's effort, they came up with a design that looked like a Greek amphitheater with a stage and a roof. Higginson took the design to Europe, where he consulted various conductors and musicians. They had never seen anything like it and unanimously condemned the concept.

Sabine had accepted the commission for the acoustic design of the proposed hall and learned that Higginson, after returning from Europe, told the architects to copy the Gewandhaus in Leipzig. The Gewandhaus had only one balcony and seated 1,560. In order to meet the 2,600-seat capacity proposed for the new hall, architect Charles McKim merely increased all

Photograph: Courtesy of the Boston Symphony Orchestra

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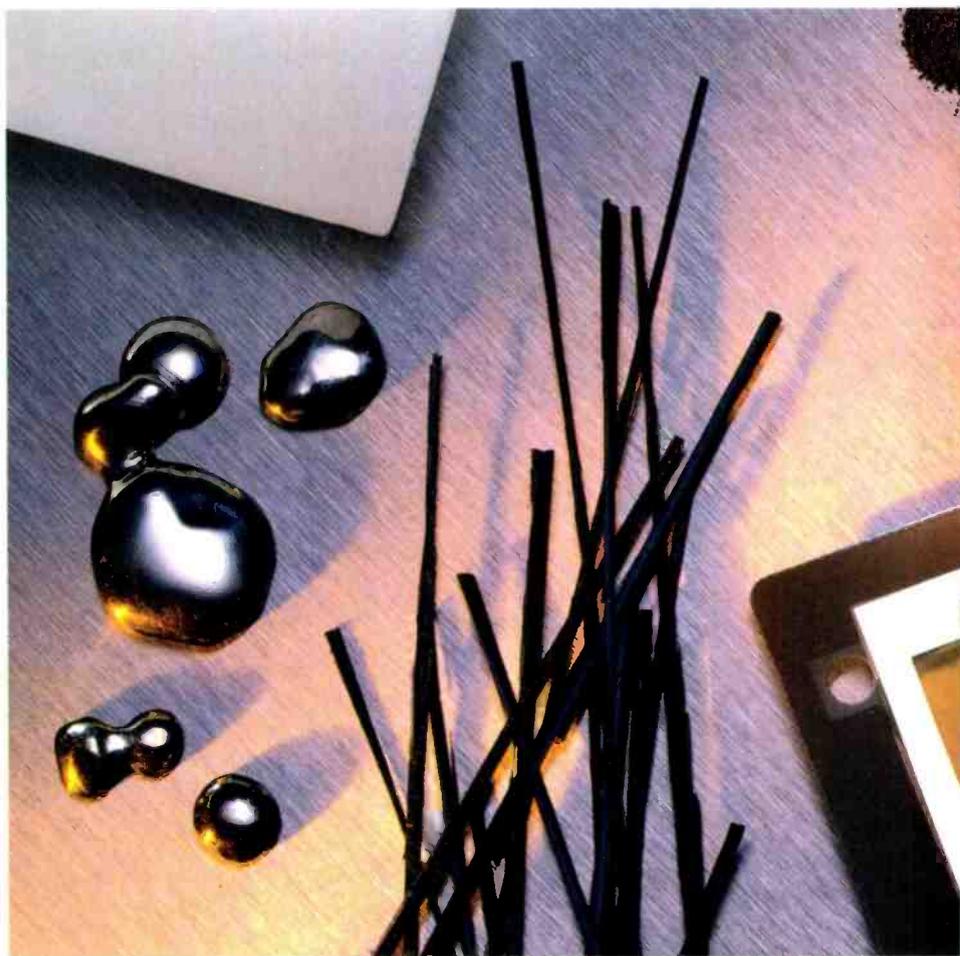
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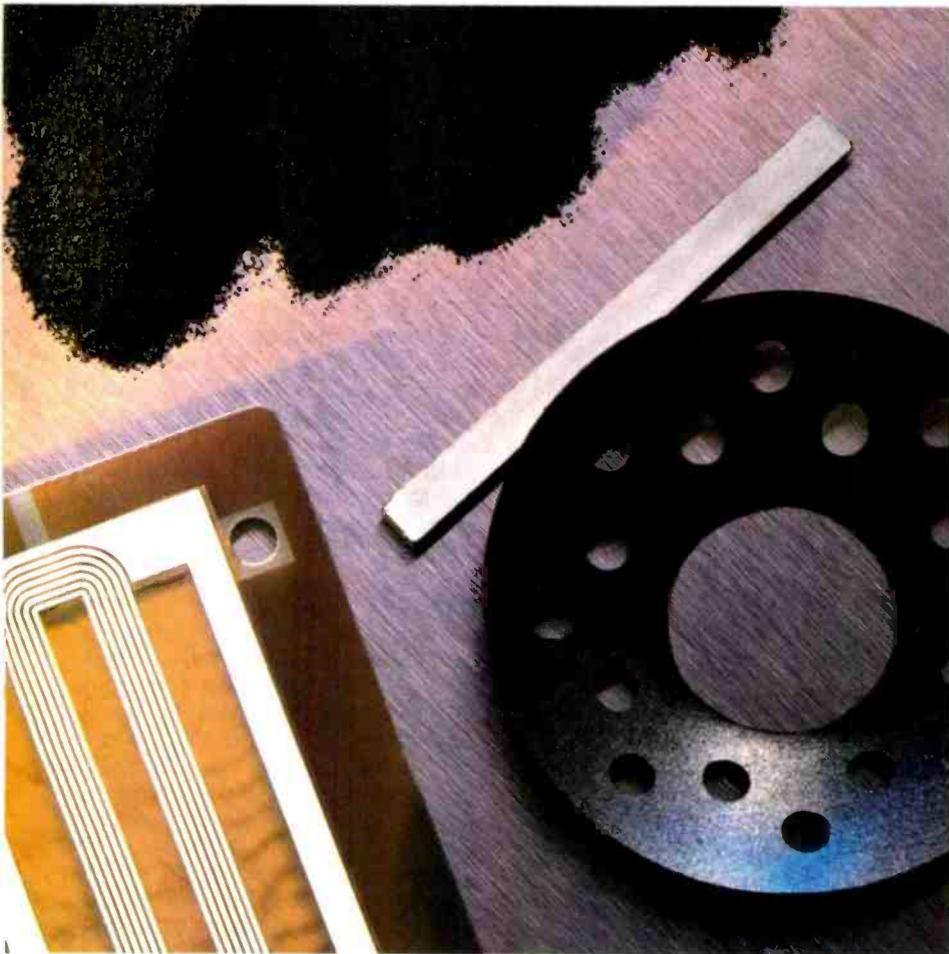
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Symphony Hall's niches, the statues filling them, and the coffered ceilings all help provide good sound diffusion.

the dimensions of the Gewandhaus by a factor of 1.3.

Fortunately, Sabine had his formulas and equations for reverberation time, and he had measured the absorption coefficients for upholstered seats and for an audience. He used this knowledge to calculate the reverberation

time for the Gewandhaus and for McKim's expanded version of it. Sabine determined that the reverberation time for McKim's proposed hall would be over 3 seconds. Because the new hall was intended to be much wider, the resulting sound would be very cavernous, like a gymnasium's. Therefore, he

told McKim and Higginson that they shouldn't proceed with their plans. Sabine pointed out that the old Music Hall was built on the same concept as the Gewandhaus. In his AES tour lecture, Beranek quotes Sabine as saying, "It is rectangular, has many irregularities on its walls and ceiling, and people like its sound. Let us simply copy it and lengthen it a little by adding a stage house."

The old Music Hall had balconies extending over the sides of the stage, so members of the audience could actually look down on the musicians. Because Sabine didn't think that this was a very good idea, he suggested eliminating the end wall of the Music Hall. In his view, adding the stage house would give the new hall the extra capacity to accommodate 2,600 people and would eliminate the overhanging balconies. Higginson and the architects agreed, and that is how Boston Symphony Hall was built.

Sabine and the architects incorporated several features which greatly contribute to Symphony Hall's good acoustics. For example, built-in along the walls are niches which contain classical statuary. This provides good diffusion of the sound in the hall. Sabine had the fronts of the balconies perforated, which provides diffusion and avoids echoes. The ceiling is coffered, with about a half-dozen different sizes and shapes of coffers affording even more diffusion of the sound. Sabine was farsighted enough to provide "quiet" ventilation. By 1887, electric motors and large fans were available. Sabine recommended that one-fifth of the ceiling be perforated to allow fresh air to drop down into the hall. The exhaust air goes out through grilles on the lower side walls. Sabine's design also included corridors and offices surrounding the hall. These act as "air buffers" to isolate the hall from street noises. In the early days, horse-drawn wagons on the cobblestone-paved streets made a lot of noise, but the corridors still do a good job of noise suppression. However, sometimes noises do creep in during recording sessions. During a quiet passage of an RCA Red Seal recording of "Scheherazade" (I believe Erich Leinsdorf was conducting), you can hear a bus accelerating outside!

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Boston Symphony Hall is considered a treasure now, but its initial reviewers criticized its sound in no uncertain terms.

Boston Symphony Hall opened in October of 1900. It didn't receive very good reviews, but this was mainly due to complaints by visiting European orchestras and conductors. In those days, the orchestras had about 90 players, and the Europeans were used to performing in smaller concert halls which seated 1,400 to 1,600 people. In the larger volume of Boston Symphony Hall, with its 2,600 seats, they felt that their music didn't sound loud enough and that it was weak and thin. In his wonderful book, *Music Acoustics and Architecture*, Dr. Beranek points out that the median size of most halls in England, Canada, the U.S., South America, and Israel is about 3,000 seats. The present-day orchestral strength of 107 to 110 players provides much louder sound, although Beranek says that in Boston Symphony Hall, an orchestra of 120 players would be needed to approximate the loudness levels of the 90-piece orchestras in the small European halls.

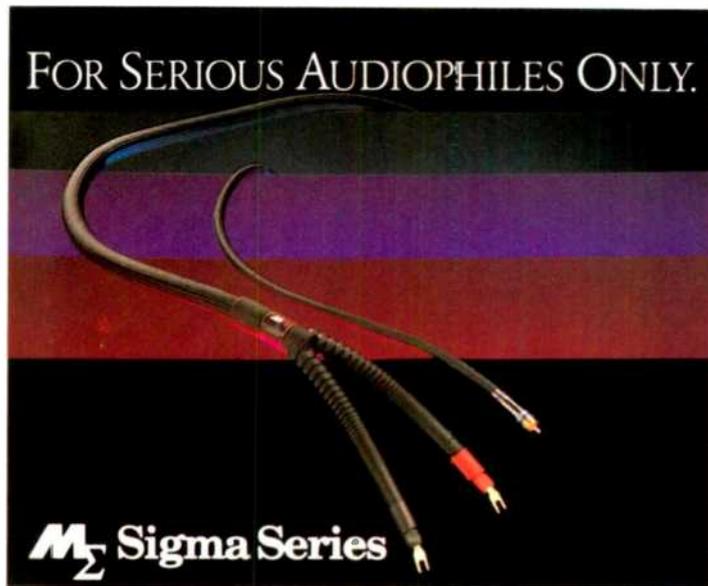
Boston Symphony Hall has a foundation of poured concrete, and its walls are constructed of hard plaster over concrete blocks. The upper part of the hall is the same except that the concrete blocks are hollow. There are no rugs, except in the aisles, and they are quite thin. There is also no wood except around the stage. The architects designed the stage's side walls to make a pleasing appearance. These walls are of 1-inch-thick wood with many irregularities, which provides good diffusion and good sound. Sabine designed the stage enclosure partly to accommodate the pipe organ, making sure the bottoms of the pipes were over the musicians' heads.

Dr. Beranek has strong feelings about the use of wood in a concert hall. Although most musicians believe strongly that the best sounding concert halls have interiors entirely made of wood, Beranek counters by saying that few of the best halls in the world are actually made of wood. In his opinion, wood tends to weaken and attenuate bass response. Dr. Beranek says hard interiors with plenty of diffusion will provide the most favorable mixing of sounds and a good feeling from the reverberation.

Now, it is important to understand that acousticians today are not bashful

about criticizing each other's designs. For example, a number of acousticians feel that rectangular halls—like the Gewandhaus, Boston Symphony Hall, Orchestra Hall in Minneapolis, and now Avery Fisher Hall—are all "wrong" and derisively label them "shoe boxes." They espouse the wider, fan-

shaped halls. (It must be noted that most fan-shaped or "wedge" halls are multi-purpose halls, while rectangular halls are used mainly for classical concerts.) Dr. Beranek's feelings about wood are strongly challenged by Cyril Harris' design for Avery Fisher Hall, in which the stage enclosure is wood and



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the walls of the hall are of heavy, overlapping, 1-inch-thick, random-size wood panels. Harris is also a strong believer in the value of diffusion, as evidenced by his controversial use of "cuboid" reflectors behind the stage (and partially on the ceiling over the stage) in his design of Orchestra Hall in Minneapolis. A slight "slap echo" at about 100 Hz has been attributed to these reflectors.

According to Dr. Beranek, a stage floor should be made of wood but need only be strong enough to support the orchestra—"it doesn't need to support a truck." With the kind of floor construction in Boston Symphony Hall, he states that the energy transmitted by the pins of the cellos and contrabasses to the floor cause it to resonate and provide a richer sound. In contrast, the stage floor in Avery Fisher Hall is made of heavy oak planking, laid edge-wise. It has great strength but is less resonant. General opinion seems to be that bass sound in Avery Fisher Hall is not as full but is extremely clean.

Sometimes, instruments rest not on the stage floor but on risers, which elevate certain sections of the orchestra, usually the brass and some woodwinds, above the strings. Dr. Beranek noted that conductor Charles Munch didn't use them, while the first thing Erich Leinsdorf wanted was the risers replaced. Stokowski believed in them and taught me to use them. I used risers when I recorded Arthur Fiedler and the Boston Pops in Symphony Hall. String players tell me they feel better and have better concentration when trumpets and trombones are not "blowing off the back of their heads." However, risers should be sturdy, and neither percussion nor string bass should be on risers, which would resonate too much and muddy the sound.

The reverberation period of Symphony Hall is about 1.8 seconds at mid-frequencies, rising to about 2.1 seconds at lower frequencies when all

2,600 seats are occupied. When the hall is empty (as it obviously is during recording) the reverberation time rises to 2.7 seconds at the lower frequencies, which can be quite a problem in recording. Over the years, various measures have been undertaken to compensate for this longer reverberation time. RCA engineer Lew Layton built a 25-foot "lip," or extension, to the stage to bring the orchestra further out into the hall; I used this extension when I recorded Arthur Fiedler. Since Jack Renner of Telarc (who recorded the Beethoven Piano Concertos with Rudolf Serkin) and I both used spaced-array omnidirectional mikes in Symphony Hall, we had to be extremely careful in balancing our ratio of direct-to-reflected sound pickup. Some European record companies used 25 to 35 microphones in a very close-up manner in order to "swamp" the hall acoustics; later on, they ran the tapes through a spring-reverb unit to provide ambience. (Nowadays, they use digital reverb units.)

If I were going to record now in Boston Symphony Hall, I would insist on seating some 2,600 pieces of polyurethane foam "instant people" to give me the same lovely 1.8 seconds of reverberation as when the hall has a live audience. John Newton, an engineer friend of mine who does a lot of work for Philips, made a wonderful recording of the Mahler Second Symphony with the Boston Symphony, and he used extensive amounts of absorbent material to dampen the hall. The result is a highly detailed recording enrobed in a lovely, warm ambience.

Boston Symphony Hall is indeed an acoustic marvel. Considering that it is a modified copy of the Gewandhaus in Leipzig, have there been any other copies made? The answer is that the concert hall at Kennedy Center in Washington, D.C. is pretty much of a direct clone, as is the concert hall in Salt Lake City, Utah. Perhaps we'll do a story on them one day. 

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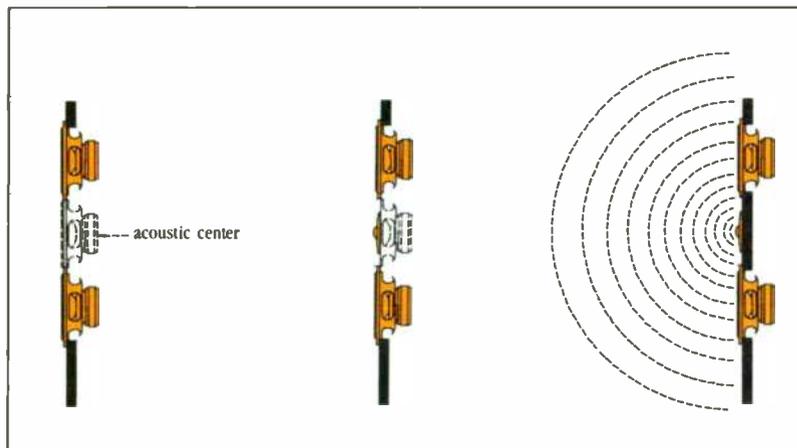
Both Polk RTA series loudspeakers achieve the extremely rare combination of good looks and state-of-the-art performance. The tall, elegantly slender, and deep “tower” design cabinets allow for substantial internal volume for high efficiency and powerful bass, while requiring less than one square foot of floor space. The small baffle surface area around each driver minimizes diffraction (sonic reflections), thereby insuring outstanding imaging and low coloration.

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Where to buy Polk Speakers? For your nearest dealer, see page 152.

## TAPE IT EASY

**Copy Cats**

You can't record on CDs yet, but you can record from them, with far greater convenience than when transferring from LP. Even the simplest CD player makes it easy to start and stop the unit in sync with the tape deck, and lets you automatically record only the tracks you want from the original disc (or discs, if you have a CD changer). Most players also let you program those tracks in any order you like. Further, if your recorder's counter reads in elapsed or remaining time, you can compare that to the timings on your CD player's display to see if the next cut will fit on the remaining tape.

These conveniences were built into the CD system for general use, not just for taping. In the past year or two, however, two features designed specifically as taping aids have been added to CD players. One is a time-addition system that shows you which cuts on the disc will fit onto a tape of given length. The other scans the signal levels on the disc and finds the highest recorded peak. If you then use the peak to set your tape deck's recording level, you'll be safe against signal overload when you transfer from the CD. And one new CD player changes the order of the cuts to make them fit more neatly onto the two sides of a tape.

**Limited Monopoly**

New, high-tech features which appear on one company's products have always appeared soon thereafter on several other brands. But if it seems to you that the pace of such copying is speeding up, you're right—and the reason is ICs. In order to keep the cost of specialized new ICs down, the companies which develop them often have to accept only a limited-time exclusivity on new chips, and then must allow their sale to other companies.

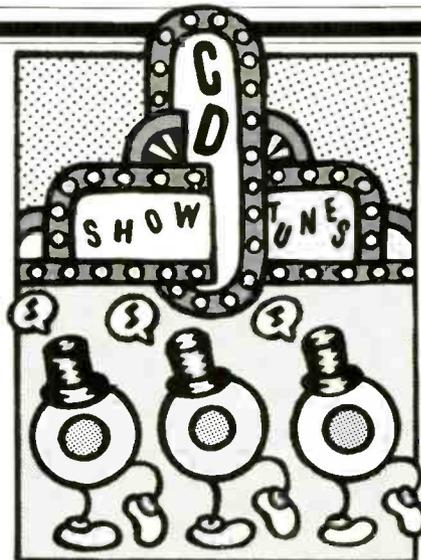
This speeds the dissemination of new features and technology, which in one way is good. But it may also slow the development and improvement of that new technology

by prematurely freezing designs. The difference between the cost of buying an existing IC and producing an improved version is far greater than the difference between continuing a discrete-component design and improving it.

In the days before ICs, new challenges (such as the onset of stereo FM) would be met by about as many circuit designs as there were companies in the field. Similarly, if one company was first to introduce a new and useful circuit, its competitors promptly would seek new (and better) ways to do the same thing. Only after one or two of those designs proved themselves superior would standardization set in.

**Tera's Revenge**

Audio equipment has been picking up video-oriented features lately, such as Dolby Surround decoding and combined video/audio signal switching. Now video is striking back: Tera's new 31-inch TV set (ahem . . . er . . . ah . . . "monitor/receiver") boasts not only MTS stereo reception but FM stereo as well, thanks to a built-in frequency-synthesis tuner with six AM and 18 FM presets. (Yeah, I know—grandma's old DuMont had a built-in FM tuner, too, but this is fancier.) The infrared link between the set and its remote controller is bidirectional, so the remote can double as a wireless headphone receiver. The amplifiers are more typical of audio than video systems, too: They deliver 35 watts into each stereo speaker, plus another 35 watts into an optional subwoofer.

**Back from the Cutting-Room Floor**

A lot of Broadway show tunes have been waiting in the wings as far as recordings are concerned. Many shows had more music in them than an LP could hold, which meant some songs didn't make it into the album. Most shows' music should fit onto one CD, however. Already, some recordings (such as the CBS albums of Stephen Sondheim's *Anyone Can Whistle* and Leonard Bernstein's *On the Town*) are being reissued on CD, with songs that were crowded off the LP originals.



Art Blakey

### On a Blue Note

Billed as a special afternoon to celebrate "the boogie-woogie dream that lasted 50 years," Blue Note Records marked its golden anniversary on January 6, 1989, with a party/jam session at New York City's Birdland that featured performances by many of the label's most well-known musicians. The Blue Note dream began simply enough in 1939, when Alfred Lion brought Meade Lux Lewis and Albert Ammons into a studio to make some private recordings. These sides would set the standard for the label for the next half century. Four months later, the corporation's statement of purpose was published in the label's first brochure. In it, Alfred Lion wrote, "Blue Note records are designed simply to serve the uncompromising expressions of hot jazz or swing, in general. Any particular style of playing which represents an authentic way of musical feeling is genuine expression. . . . Hot jazz, therefore, is expression and communication, a musical and social manifestation, and Blue Note records are concerned with identifying its impulse, not its sensational and commercial adornments."

Over the years, Lion and his childhood friend/business partner, Francis Wolff, helped to bring about and highlight many of the innovations which would occur in this music format. From the early days with Lewis and Ammons through the

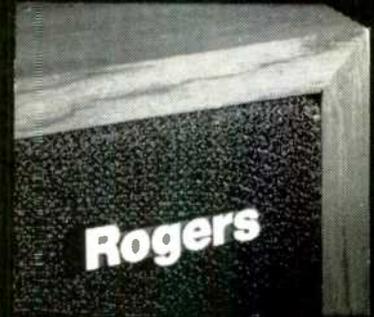
swingtet sessions with artists such as Ike Quebec, Jimmy Hamilton, and Benny Morton, and well beyond the be-bop era of Thelonious Monk, Bud Powell, and Tadd Dameron, Blue Note encouraged creative freedom in its musicians. The Jazz Messengers were originally formed as a cooperative of Blue Note personnel featuring Horace Silver, Kenny Dorham, Hank Mobley, Doug Watkins, and Art Blakey.

Blue Note was sold to Liberty Records in 1966. During the late '60s and '70s, reissue releases were sporadic, although the label did maintain a roster of many fine artists. In 1985, Blue Note underwent a massive revitalization effort as part of Capitol EMI. The label now releases between 50 and 75 reissues a year and includes a roster of artists such as Stanley Jordan, Bireli Lagrene, Michel Petrucciani, Lou Rawls, McCoy Tyner, Art Blakey, Dianne Reeves, Gil Melle, Bobby Watson, and a host of others.

In 1987, Blue Note Records—and the jazz world in general—suffered a great loss when founder and guiding spirit Alfred Lion died at the age of 78. He, Bruce Lundvall, and Michael Cuscuna were honored at the label's Birdland celebration for their dedication to jazz and their efforts to bring this uniquely American music form to a greater audience. *Audio* echoes this salute, and wishes all at Blue Note a happy anniversary.

Karen Clark

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Andromeda II is also the beneficiary of a purist design philosophy. Characterized by symmetry and balance, this philosophy is evidenced by the exclusive use of discrete push-pull circuitry throughout. Andromeda II is also fully balanced, input to output. Signals are actively amplified from both sides of the amplifier, positive and negative – as opposed to normal practice where one side is referenced to ground. Since both sides of the loudspeaker are then driven symmetrically by matched, but separate sources, greater control over piston (or diaphragm) motion is achieved. The result is more precise imaging, a better, more stable soundstage, and enhanced spatiality.

Balanced amplifiers also offer high common mode rejection and lower attendant noise. Much has been written lately about the superiority of this approach; and recently a number of other high end companies have joined SUMO in the manufacture and marketing of balanced designs – at an average retail price of over \$5,000!

Andromeda II benefits from the most recent advances in semiconductor technology. Its output stage, for example, utilizes 16 individually measured and matched mosfets in a symmetrical push-pull arrangement. These devices, only recently introduced, are stunningly fast and stable. Their performance is further enhanced by a proprietary output linearizing circuit that reduces crossover notch distortion to levels more typical of Class A amplifiers. As a result, air is reproduced around acoustic instruments with a naturalness that must be heard to be appreciated. Massed strings are warm and vibrant; and their overtones luminous – all without a hint of hardness or strain.

Andromeda II is also a low negative feedback amplifier. Its rated power is 200 Watts per channel into 8 Ohms. And there is no protection circuitry or intrusive current limiting to constrict sound quality. All told, Andromeda II is a remarkably natural and faithful reproducer of music, and an amplifier that should be considered for any application where smoothness and power are the prime requisites. As with all SUMO electronics, Andromeda II is designed and manufactured in the United States.

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## WOOFING IT UP



### Back-Seat Boogie

"While you're waiting," I said to my wife as I got out of our car, "please readjust the back seat for optimum bass." I meant it. The angle of the Scorpio's back seats is adjustable, and the last passenger we'd carried back there had adjusted them so that there was a big gap between the seat back and the removable parcel tray that rests above the trunk. Our subwoofers use the trunk as their enclosure, and are mounted right behind the seats, so the gap caused drastic bass loss due to cancellation. Resetting the seats to minimize the gap raises the bass output

noticeably. Eventually, when we get around to adding flexible seals at all possible points, the bass will improve even more.

Admittedly, I'd get even better bass by enclosing my woofers, but the box would get in the way: I bought the Scorpio as much for its load-carrying capacity as its slick handling. (With the parcel shelf off and the back seats folded, I just hauled two Infinity RS 9 Kappa speakers.) Even a removable box would pose problems—limited load space when it's in, and no place to stash it when I take it out. (I park in a public garage a mile from my home, so I can't just

pop the box into my garage when I remove it.)

Because I was using the trunk as my enclosure, I installed Linear Power's 1752S subwoofer system, which includes four 8-inch woofers with dual voice-coils, plus a servo amplifier. In this system, only one voice-coil of each woofer is driven by the amp; the other acts as a generator, producing a signal that mimics the speaker's motions. Servo circuits in the amp compare this signal with the audio signal going to the speakers. Then the servos modify the audio to compensate for any differences between it and the speakers' actual motions.

Motional servos like this easily adapt to any enclosure, even to the point of keeping my bass constant whether my trunk is full or empty. They also adapt to reasonable degrees of enclosure leakiness. What they cannot adapt to is a leak problem like mine, where the paths between the woofers' front and back waves are both open enough and short enough to cause outright cancellations. I've always felt that it pays to get the basics right before you add fancy technology (such as servos). I guess it's time to find a way to plug that leak.

Illustrations: Rollin McGraff

### Relay Report

When I first discussed my stereo installation plans for the Scorpio, I said that I would like to find a heavy-duty relay which could withstand the rigors of the underhood environment. I wanted to use it to switch my stereo off entirely during those periods when my car would sit idle for a few weeks. Reader Jack Copeland, who's been in audio since 1942 ("Retired and turned into an ETC type," Copeland says), came up with the solution:

"Use a headlight dimmer switch. It requires no voltage to operate, is ever ready to go from on to off, or vice versa, and is highly reliable. 'Infant mortality' is rare, and wear-out is probably beyond the life of either the car or the radio. There is always a place where an extra one can be mounted."

Now why didn't I think of that?



### Stealthy Stereo

I didn't expect to see a Toyota stereo in my friend Gordon's car—even though the car is a Toyota—but there it was. Gordon, you see, handles public relations for Blaupunkt, and several people from Blaupunkt were in the car with us. "It's an intelligent head unit," Gordon said defensively. "All I have to say is 'Volume up!' and it gets louder. Or I can tell it: 'Find me some classical music,' and it will." As he spoke, the radio obeyed him—but I noticed that his left arm twitched (I couldn't see his

hand) whenever he talked to his radio. Sure enough, he was using a remote control . . . for a hidden Blaupunkt Houston head unit. Normally, the Houston hides behind a blank panel at the bottom of the center console, while the remote is attached to the steering wheel with Velcro. A remote sensor at the side of the car completes the command link. I really don't know how intelligent either the Toyota or the Blaupunkt head unit is, but the installation is intelligent, indeed.



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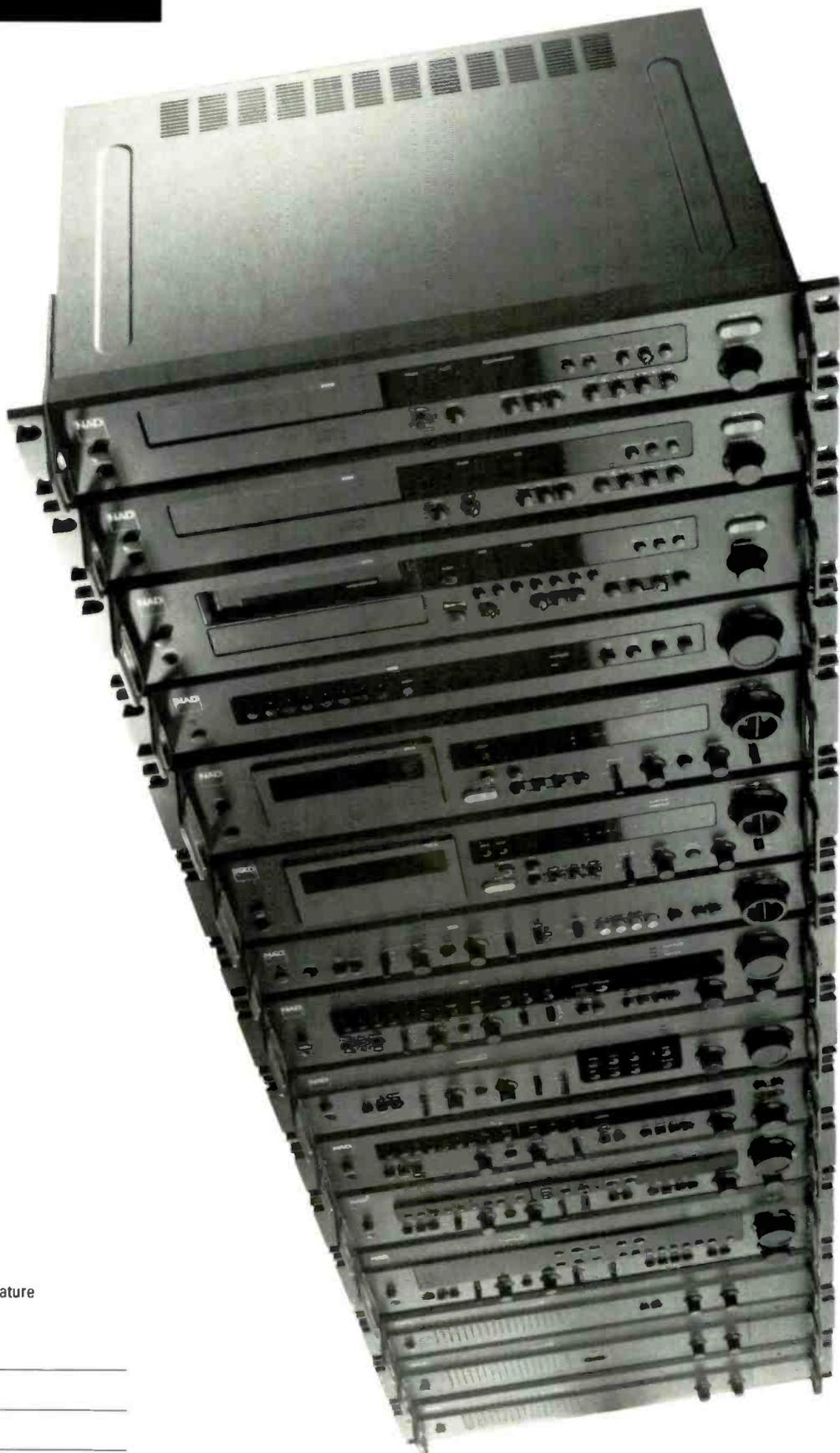


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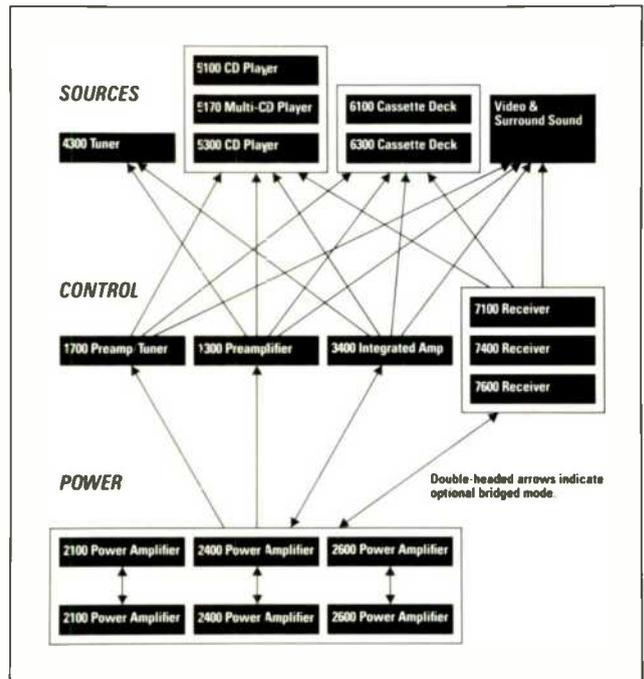
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Thanks to digital trickery, you won't miss the next five seconds of program during the replay, either. During playback, the memory keeps absorbing the broadcast and plays it back when the repeat is over. The memory's clock rate gradually speeds up so that it catches up with the real-time broadcast about two minutes later, and the memory will then be ready for another replay the next time you miss a vital message.

This memory feature will show up first on radios made for Mitsubishi's Mirage cars sold in Japan; no word yet on whether it will also be in Mirages sold in the U.S.



### Better Car Speakers?

I'd noted that today's moderate-priced car speakers sound better than yesterday's. David Monoson, a marketing and public relations consultant, recently gave me some insight into why this is the case. According to Monoson, high-end speaker technology is creeping into low-end car speakers: "For example, new cone and surround materials have a lot more resistance to changes in ambient temperature, weather, and humidity. Speaker alignment is better than it ever was: The centering of the voice-coil assembly in the magnet structure is very accurate. It's no longer just a manual shim or a quick assembly routine. Now, they have very precise tooling to do it. Voice-coil construction is very good—close to state of the art in terms of using forms with high thermal conductivity, so that heat is dissipated rapidly. Coil windings are done with high precision, using edge-wound wire. There has always been a demand for high power-handling capacity, and now there's a

reasonable engineering response to this demand in small speakers.

"The value for the dollar today is very high," Monoson continued. "Someone who goes out and spends \$50 or \$60 for a loudspeaker gets quite a lot of value in any one of the major brands. One of the problems that hasn't really been solved is high-frequency dispersion—where do you put your tweeters and aim them for best imaging and response? Conventional installations don't always do it. A lot rests on the installer. Using dispersive devices in front of the tweeter, though frowned on in the home, works nicely in cars. We've found in our tests that multi-layer dispersion screens seem to work. (I use a piece of perforated plastic, semi-soft like polypropylene, 1/8-inch thick, with holes spaced fairly closely.) The thinner the screen, the less effect you're going to get. The second screen can be a thin screen, maybe metal like the grilles on a/d/s/ speakers. Adjusting the spacing between screens (about 1/8 to 3/8 inch) affects the dispersion."



### C-Quалms

The march of AM stereo is inexorable—or is it? Factory sound systems with C-QUAM AM stereo are available from at least 10 overseas car manufacturers and from all car manufacturers in the U.S.; Chrysler now offers only AM stereo in all its U.S.-built cars and trucks. As of last fall, at least 500 stations were broadcasting AM stereo in the U.S., as were at least 150 more in other countries. Nevertheless, AM stereo does not seem to be overwhelmingly popular among independent stereo

manufacturers. More than 15 such companies do offer C-QUAM, but not on all models. In fact, while the most expensive factory sound systems are most likely to have C-QUAM, aftermarket producers tend to put it in their medium-priced systems. At the unveiling of one flagship tuner/CD unit, I asked its manufacturer why it did not include AM stereo, when several of the company's earlier models (including a former flagship) did. "We found that customers were not as interested in AM stereo as we'd hoped," he said, "so we felt it

made more sense to put that money into features they really cared about."

To me, this made sense. I find that stereo definitely makes AM more worth listening to, especially on radios like Delco's, which broaden their bandwidths when in stereo mode. Given a choice between a system with AM stereo and an otherwise identical system without, I'd go for C-QUAM every time. But since I'm never given such a clear-cut choice, I'd base my choice on other factors rather than be swayed by the presence or absence of AM stereo.

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IN FROM

IN FROM

A

B

C

OFF

PROG.

1

3

OFF

PROG.

1

3

OFF

PROG.

1

3



RUSSOUND/FMP INC.

MA-5



T<sub>1</sub>

T<sub>2</sub>



T<sub>1</sub>

T<sub>2</sub>

R



# TOO MANY SIGNAL SOURCES

One frequent problem today is that there aren't enough high-level inputs in receivers, preamps, and integrated amps because of the abundance of high-level signal sources for home audio systems: CD players, tape decks, tuners, laser videodisc players, stereo TVs, VCRs, electronic organs, synthesizers, et al. In the case of tape decks, it is not unusual for an audiophile to have two or more decks of several kinds: Cassette, DAT, open reel, and VCR—either hi-fi analog or digital via an outboard processor.

To solve the problem of insufficient inputs and outputs raised by multiple tape decks, several manufacturers offer tape switchboxes at retail prices varying from about \$25 to \$200. The ones to which I refer are all passive devices (no electronics). Accounting for the price differences, in addition to pricing policy, are such factors as quality of construction, number of decks that can be accommodated (ranging from three to 10), and refinements such as control of signal level, bridging facilities for adding another switchbox in tandem, and insertion facilities for noise-reduction devices, equalizers, and other signal processors.

The basic and most popular tape switchbox accommodates three decks. It feeds the audio signal from a receiver,

preamp, or integrated amp to the decks—singly or in any desired combination—for recording. At the same time, it feeds the outputs of the decks, singly or in combination, to the receiver for playback. In addition, it permits dubbing from any deck to any other deck, singly or in combination; a monitor switch enables one to listen to the signal being dubbed.

A tape switchbox can also be used to increase the number of high-level inputs for sources other than tape decks. A switchbox intended for three decks can provide as many as six inputs (for a net gain of five inputs, after deducting the system input jack receiving the input from the switchbox), well within the needs of most audiophiles. This is achieved by using both the tape input and tape output jacks of the switchbox as inputs, connecting each of them to the dubbing bus, and putting the "Monitor" switch in its "Copy" position to feed signals from this bus to the receiver. (For those who only need additional high-level inputs, simpler switchboxes, such as DB Systems' DBP-2J/5, are intended for just such a use.)

My experience has been with two tape switchboxes, each intended for three decks: Russound/FMP's Model TMS-3 (selling in one New York store for under

A tape switchbox can handle  
those extra ins and outs.

**HERMAN BURSTEIN**

\$60) and Radio Shack's Tape Control Center (selling for about \$25). Their circuits are fairly similar. Presumably, the circuits of other switchboxes mainly differ in the number of inputs and outputs they offer (i.e., the number of decks accommodated).

To realize the potential of a tape switchbox, it is advisable to fully understand the circuitry of a typical unit; Fig. 1 shows the circuit employed by Russound. For simplicity, it shows only one channel, and for clarity it is a revision

switch is in the "Play" position. If, however, the "Monitor" switch is set to "Copy," the signal at the dubbing bus goes instead to the "To Input" jack and then to the receiver. Each playback switch also has an "Off" position as well as a "Copy" position for dubbing.

When any deck's playback switch is set to "Copy," the deck's output signal goes to the dubbing bus. Setting the recording switches to "Copy" feeds the to-be-dubbed signals at the bus to the decks' inputs for recording. To lis-

ten the top row but go from the switchbox to the receiver via jacks in the bottom row. (It may be noted that this anomaly doesn't exist in Russound's Models TMS-5 and TMS-10.)

None of this is meant to discourage the reader from using these or other tape switchboxes. It is simply meant to alert you that the user's manual, its schematic, and its hookup diagram should be studied very carefully to discern what goes to what. (If you have a multi-tester, you can use its resistance measuring range if you wish to trace connections.)

To illustrate and flesh out the usefulness of the tape switchbox, I can draw on experience. Some years ago, before receivers (and preamps and integrated amps) began providing accommodations for two decks, I acquired a Russound TMS-3 to connect my Nakamichi cassette and Tandberg open-reel decks to my Lafayette KT600 tube preamp. Later, I acquired an NAD 7155 receiver and—temporarily, as it turned out—relegated the preamp and switchbox to the attic because the NAD accommodated two decks and provided bidirectional dubbing. A few years ago, after adding a CD player and stereo TV, I found myself one short of enough high-level inputs. Back down from the attic came the switchbox. The outputs of the CD player and stereo TV were connected to two of the Russound's jacks marked "Outputs," the "Monitor" switch was set to "Play," and the "To Input" jack was connected to the receiver's "CD/AUX" jack.

This was not all. I also replaced my old and ailing Thorens TD124 turntable with a Dual CS 5000. I am slowly transferring my 78-rpm phono discs to cassette, and the Dual is one of the extremely small number of turntables today that offers the 78-rpm speed. (I swap my usual cartridge for one with a 78-rpm stylus when doing this.) This project led me to bring the Lafayette preamp back down from the attic. Unlike modern records, with standard RIAA equalization, 78s were made with a variety of equalization characteristics, usually not specified. Happily, the Lafayette has switch-selectable phono equalization, with a choice of four bass-boost and six treble-cut settings for a total of 24 different curves. Moreover, it provides a rumble filter, scratch

**S**witchboxes designed for recording can be used for several other functions, so your system is much more flexible.

of the schematic presented in the TMS-3's owner's manual.

The output signal from the receiver's (or preamp's or integrated amp's) tape output jack is fed to the "To Output" jack of the Russound switchbox; it then goes to what we may call a recording bus. From this bus, the incoming signal is fed by recording switches, singly or in combination, to the jacks labelled "Inputs," which feed the signal to the tape decks' inputs. Each recording switch feeds the bus signal to its associated deck when in the "Record" position. The recording switches also have an "Off" position and a "Copy" position for dubbing, which connects the "Inputs" jack to a dubbing bus instead of to the receiver signal. (More about dubbing soon.)

**T**he outputs of the decks go, naturally, to the switchbox jacks labelled "Outputs," and via isolating resistors to the playback switches, which feed the outputs singly or in combination to a playback bus. Each playback switch feeds its deck's output to that bus when in the "Play" position. From the playback bus, the signal goes via a "Monitor" switch to the "To Input" jack and then to the tape input of the receiver. This happens provided that the "Monitor"

switch is set to "Play." If, however, the "Monitor" switch is set to "Copy," the signal at the dubbing bus goes instead to the "To Input" jack and then to the receiver. Each playback switch also has an "Off" position as well as a "Copy" position for dubbing.

When any deck's playback switch is set to "Copy," the deck's output signal goes to the dubbing bus. Setting the recording switches to "Copy" feeds the to-be-dubbed signals at the bus to the decks' inputs for recording. To lis-

ten to the signal(s) being dubbed, the "Monitor" switch must be turned to "Copy." The values of the resistors shown are apparently not critical. Russound uses 2.2 kilohms in the TMS-3. An older, almost identical Radio Shack switcher used 3.3 kilohms and added a 2.2-kilohm resistor in the "To Output" line; Radio Shack's current switcher has no resistors at all. I have found two different styles of nomenclature in switchers of this type. The jacks marked "To Output" and "To Input" on the TMS-3 are, on some units, called "In" and "Out" respectively. This does not imply that either nomenclature is necessarily preferable. The differences stem from two approaches that seem equally legitimate: Russound views the signal as coming from and going to the receiver and the tape decks, while other companies view the signal as going to and coming from the switchbox.

Another possible source of confusion in the Russound and other switchboxes I've seen is that the signal from the receiver enters the switchbox via jacks located in the bottom row but goes to the tape decks via jacks in the top row. Likewise, the signals from the decks enter the switchbox via jacks in

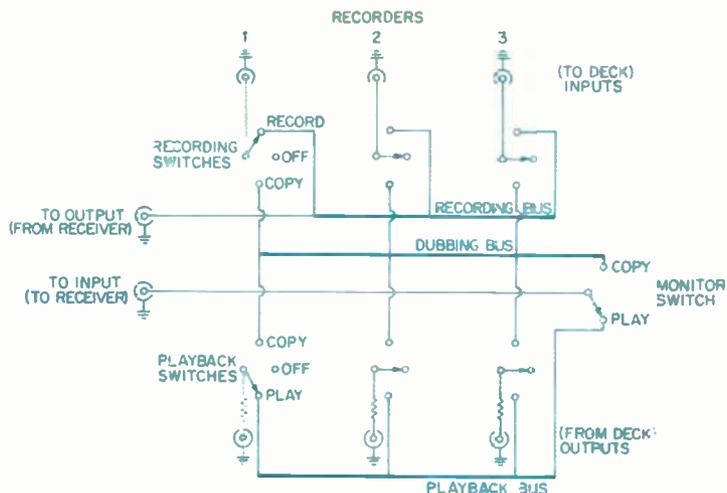
(treble) filter, and presence control (boost around 3 kHz) that all operate *ahead* of the preamp's tape output jack. With all these facilities, I can adjust playback equalization by ear to get the best sound from my old discs.

**F**or a dubbing session of 78s, I interchange the tonearm headshells containing my two cartridges and transfer the turntable cables from the NAD's phono input to the Lafayette's. The tape output jack of the Lafayette is permanently connected to the third "Outputs" jack of the Russound switchbox.

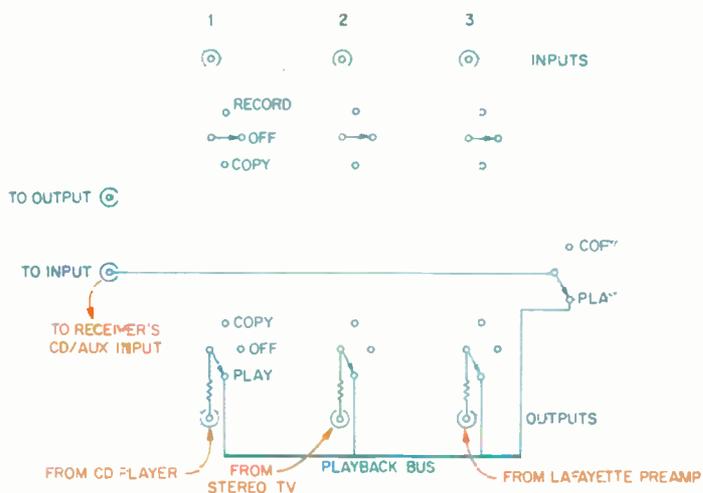
I leave all three of the switchbox's playback switches in the "Play" position so that the CD player, stereo TV, and Lafayette outputs are always simultaneously connected to the "CD/AUX" input of the NAD. This is for convenience, to minimize switching. True, the three signal sources mutually load each other and the NAD, but with only a slight and very acceptable reduction in gain and without audible adverse effects with respect to frequency response and distortion. If there were undesirable loading effects, all I'd have to do is set the playback switches for the unused sources to "Off."

Figure 2 shows the switchbox connections and settings I now use but omits switchbox wiring to elements not in use, so that the signal path can more easily be followed. To listen to CD, stereo TV, or 78s via the Lafayette preamp, the NAD's selector switch is turned to "CD/AUX." Similarly, to record from any of these, its record switch is turned to "CD/AUX."

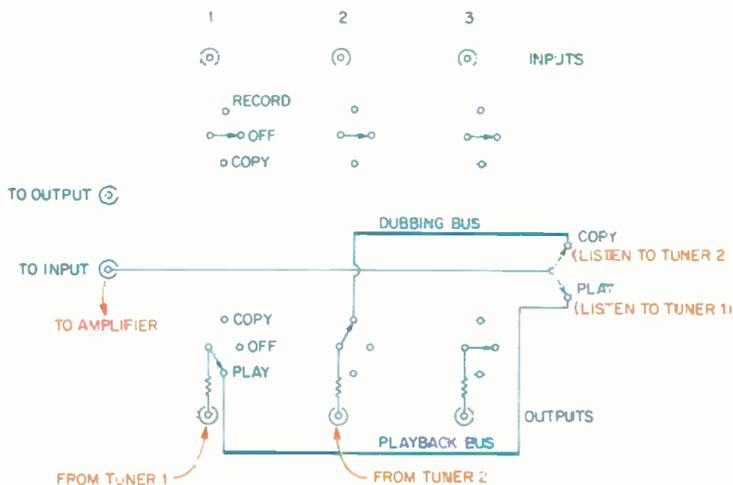
You may be wondering why I don't use the recording section of the Russound to switch my turntable between the NAD and Lafayette phono inputs. I tried this but encountered excessive hum. I connected the turntable cables to the switchbox via the "To Output" jack and, via the recording switches and "Outputs" jacks, fed the phono signal alternatively to the NAD and the Lafayette. I tried various connecting cables and grounding points for the turntable's ground wire, but hum could not be reduced to my satisfaction. I tried the Radio Shack switchbox but without obtaining noticeably different results. Therefore, the turntable was re-connected directly to the NAD. It should be recognized that the shield-



**Fig. 1—Circuit of the Russound TMS-3 tape switchbox.**

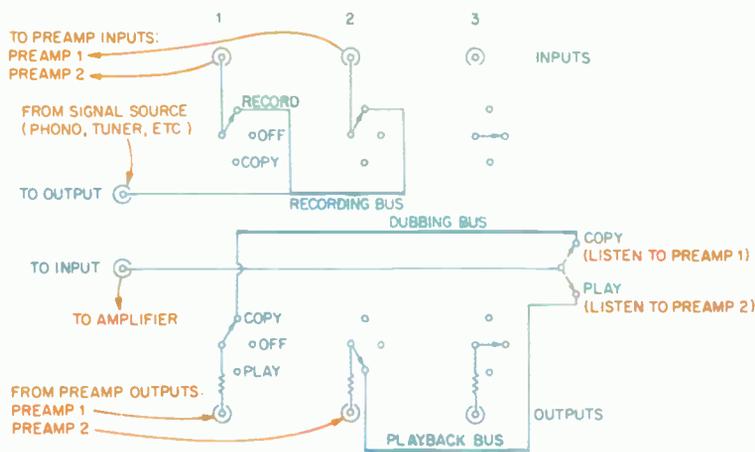


**Fig. 2—The switchbox connections and settings now used by the author. (Wiring paths to switchbox elements not in use have been omitted for clarity.) No significant loading effects have been observed from this arrangement. To add still more inputs, signals could be fed to the jacks at the top of the diagram; all switches would then be set to "Copy." See text.**

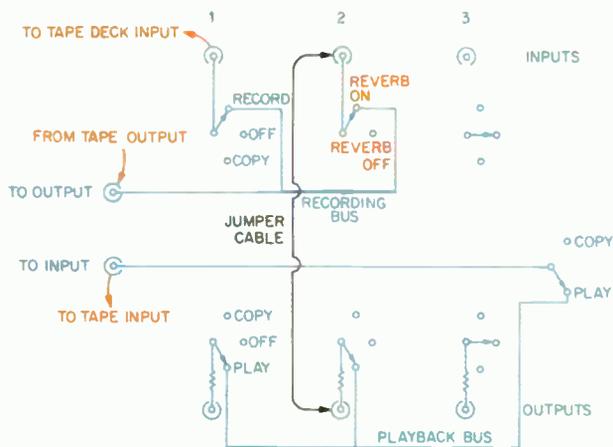


**Fig. 3—Connections and settings used to compare two tuners or other high-level sources.**

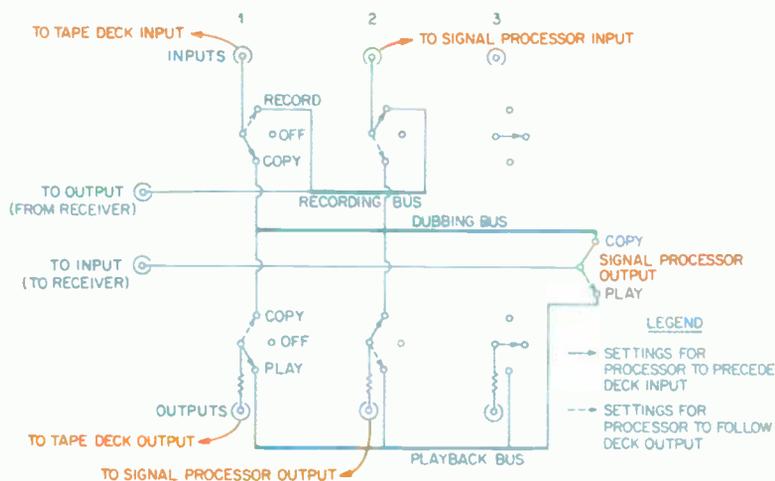
# SWITCHER SOURCES



**Fig. 4—Connections and settings used for comparison of two preamps. Note that the recording bus is serving as a Y-connector.**



**Fig. 5—Connections and settings for obtaining reverb effects from a three-head tape deck; note the external jumper cable required.**



**Fig. 6—Using this setup, a signal processor can be used to modify the signal going to a tape deck in recording (solid arrows) and to modify the signal coming from the deck in playback (dashed arrows).**

**Canton North America** (915 Washington Ave. South, Minneapolis, Minn. 55415). Connect 20 switcher, \$80, has facilities for two record/play decks and one high-level source via five-pin DIN jacks; allows dubbing from any source to any deck, with volume control for playback.

**DB Systems** (Box 460, Rindge Center, N.H. 03461). DBP-2J/5 switcher, \$69.95 with nickel-plated jacks or \$84.95 with gold-plated jacks, can be used for five sources.

**Niles Audio Corp.** (P.O. Box 160818, Miami, Fla. 33116). TSB-3, \$79.95, is for three record/play decks, with dubbing between all decks. CPM-31, \$179.95, has facilities for five record/play decks, with matrix switching permitting copying between all decks. PS-1 phono/AUX A/B switcher, \$49.95. AXP-1, \$59.95, for five high-level inputs.

**QED** (c/o May Audio Marketing, P.O. Box 1048, Champlain, N.Y. 12919). TSU2P, \$90, for two decks. TSU3P, \$110, for three decks; \$140 with gold-plated jacks and nonmagnetic casing. IX4, \$125, for two tape decks and two line-level inputs; \$155 with gold-plated sockets and nonmagnetic casing. PSU, \$50, for two turntables.

**Radio Shack**. Stereo Tape Control Center/Catalog No. 42-2115, \$24.95, has facilities for three record/play decks.

**Russound/FMP** (10 Forbes Rd., Newmarket, N.H. 03857). TMS-3, \$70, for three record/play decks. TMS-5, \$99, for five record/play decks. TMS-10, \$179, for 10 recorders and two processors. SP-1, \$199, for four record/play decks, plus signal processors and encode/decode noise reducers via built-in patchbay. MA-5, \$90, for four record/play decks and/or processors, plus three high-level sources, with provisions for daisy-chaining recorders and devices in any order. AX-6 input selector, \$49, for six high-level sources.

**Vanco** (970 North Shore Dr., Lake Bluff, Ill. 60044). Information not available at press time.

ing of these two switchboxes is designed only for high-level signals. A low-level signal, such as is produced by a magnetic phono cartridge, requires something like 40 to 60 dB of amplification before matching a high-level signal, so the former is far more susceptible to audible hum pickup. (In voltage terms, the amplification is roughly between 100 and 1,000 times; in power terms, between 10,000 and 1,000,000 times.) On the other hand, there are switchboxes on the market that are designed to accommodate low-level sources, such as Niles Audio's PS-1 and QED's PSU. (*Editor's Note:* I've found that DB Systems' DBP-2J/5 works fine, even with MC cartridges, as long as you keep it clear of strong hum fields.—I.B.)

I wasn't too unhappy that I couldn't use my switcher for phono cartridges, because I soon needed another high-level input, this time for an HQ Hi-Fi VCR. Its audio output was fed to one of the Russound's "Inputs" jacks (see Fig. 1). Switches for all jacks in use were turned to "Copy," putting their signals on the dubbing bus; the "Monitor" switch was set to "Copy," feeding the signal on the dubbing bus via the "To Input" jack to the NAD.

Additional non-tape roles for the tape switchbox may well be found by the creative audiophile actively involved with audio equipment. To illustrate, Fig. 3 shows the connections one could make to compare two tuners by moving a single switch. Tuner 1 goes to one "Outputs" jack, tuner 2 to another, and the "To Input" jack to the amp (preamp, power amp, or receiver). The "Monitor" switch is moved to "Play" to listen to tuner 1 and to "Copy" to listen to tuner 2.

As a more complex example, Fig. 4 shows how a comparison could be made between two preamps by moving a single switch. The audio signal—from a tuner, CD player, turntable, etc.—is fed to the "To Output" jack, recording switches 1 and 2 are set to "Record," and the corresponding "Inputs" jacks are connected to the inputs of preamps 1 and 2. In brief, this section of the switchbox serves as a Y-connector between the source and the two preamps. The preamps' outputs go to the 1 and 2 "Outputs" jacks, playback switch 1 is set to "Copy,"

playback switch 2 is set to "Play," and the "To Input" jack is connected to the amp. The "Monitor" switch is turned to "Copy" to listen to preamp 1 and to "Play" to listen to preamp 2.

**F**or another example of the versatility of the tape switchbox, we return to tape recording. If you have a three-head deck that permits simultaneous recording and playback—as is often the case today—and if you wish to achieve an effect akin to reverberation, Fig. 5

One final example, Fig. 6, shows how a tape switchbox could provide flexibility in coupling a tape deck with a signal processor (equalizer, imager, compander, single-ended noise reducer, reverb unit, etc.). The switch positions designated by the solid arrows cause the processor to precede the deck's input; those designated by the dashed arrows cause the processor to follow the deck's output.

Thought and experimentation will reveal applications other than those de-

**F**or less than \$100, recorder switchboxes offer versatility and utility, which puts them squarely in the best-buy category.

shows the appropriate connections for one deck. The receiver's tape output and input are connected to the switchbox's "To Output" and "To Input" jacks, respectively. The deck's input and output jacks are connected to the switchbox's "Inputs" and "Outputs" jacks, respectively, for deck 1. The record and playback switches for decks 1 and 2 are set to "Record" and "Play." The "Monitor" switch is set to "Play." A jumper cable is connected between the "Inputs" and "Outputs" jacks intended for deck 2. The jumper causes the slightly delayed playback signal to be fed back to the input for repeated but steadily diminished recording, resulting in a simulation of reverb. To turn off the reverb, the record switch intended for deck 2 is moved to "Off." My cassette deck is connected as in Fig. 5, using my old Radio Shack switchbox.

The amount of reverb depends on the deck's playback volume. Too little volume produces no audible result, while too much can lead to unpleasant results, including oscillation. Therefore, it is best that the deck have a playback volume control to regulate the reverb. Further, I find that the reverb can often be pleasant on music but usually is undesirable on speech.

picted in Fig. 6. To illustrate, assume one employs pre-deck processing and wishes to compare the deck's output with its input signal. Setting the "Monitor" switch to "Copy" will feed the signal processor's output (which is also the deck's input) to the receiver. Moving the switch to "Play" will feed the deck's output to the receiver.

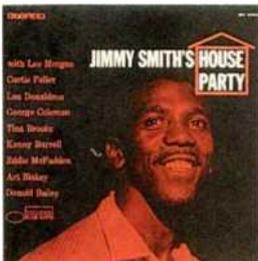
**T**he pair of three-deck, passive tape switchboxes we've discussed are relatively simple; models with much more elaborate facilities are available. Some permit the use of more tape decks and the insertion into the recording chain of encode/decode noise-reduction devices (such as outboard dbx NR units) and of signal processors such as equalizers, imagers, subharmonic synthesizers, reverb devices, single-ended noise reducers, and companders. The Russound/FMP TMS-10 and the recently discontinued dbx 200XG are examples. Still more elaborate passive switchboxes, such as Russound's SP-1, include patchbays for complex audio hookups.

Considering its usefulness and versatility, and a price well below \$100 (unless you opt for an elaborate unit), the tape switchbox belongs in the best-buy category. **A**

# Bruce Lundvall

## Traditional Tracks

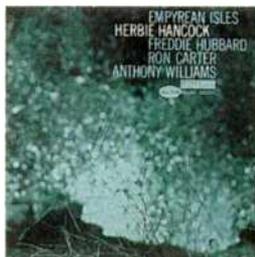
**TED FOX**



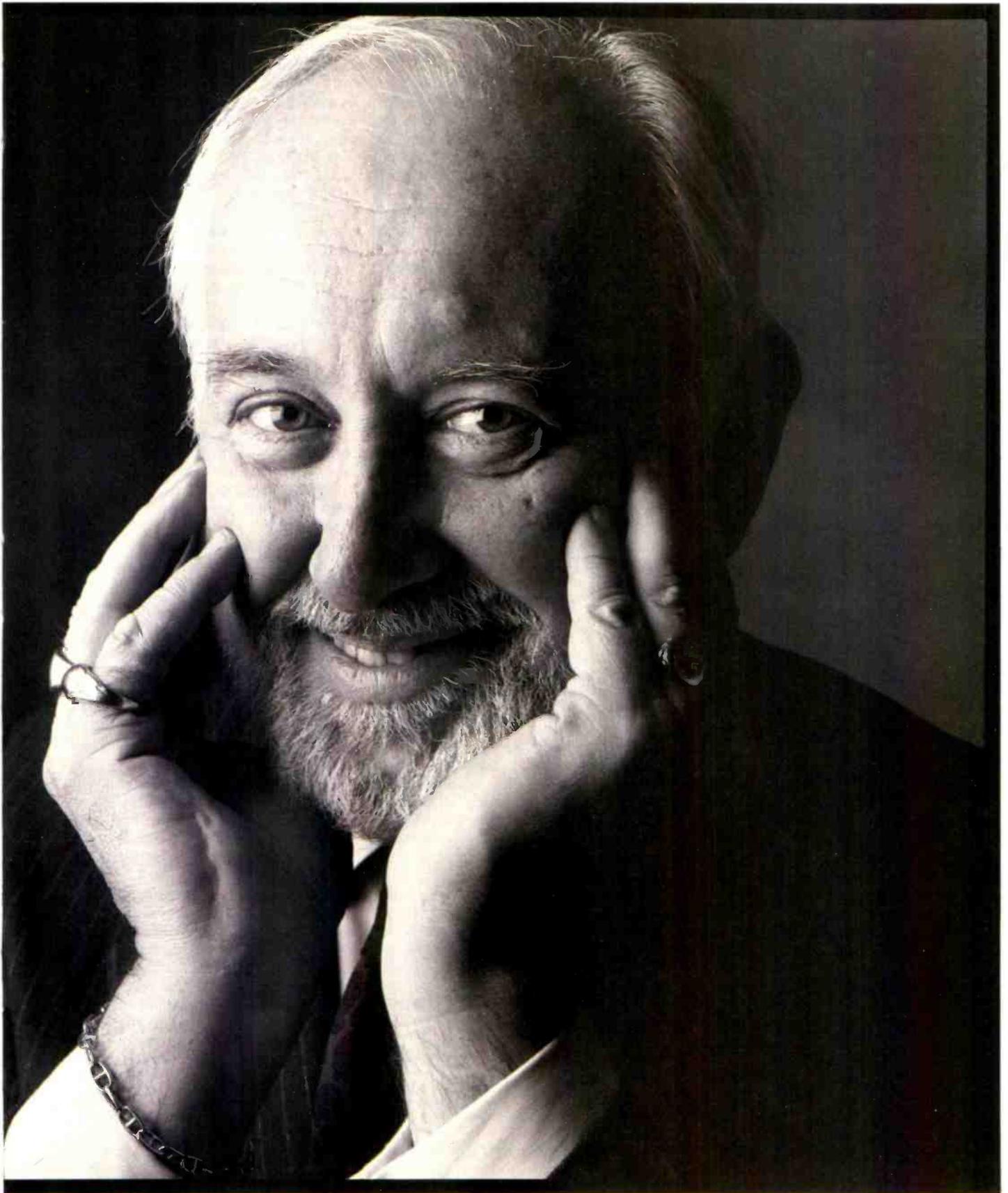
huge company, he left in 1981 to run the Elektra/Asylum label, where he signed Steel Pulse and Rubén Blades, and started the Elektra/Musician label. Lundvall moved again when presented with the opportunity to head a major new pop label, EMI-Manhattan, along with every jazz fan's dream label, Blue Note, which had come under EMI's

Bruce Lundvall is a record man with a connoisseur's sense of taste. He has left his mark on a number of important record companies and musical fields, including pop and country, but especially jazz. A jazz fan ever since his teen years as a music-obsessed New Jersey kid with a fake ID, Lundvall began hanging around the be-bop clubs on 52nd Street. His long career at CBS began as a trainee in 1960, and he went on to become general manager and president of Columbia Records. There, he signed top artists like Willie Nelson, Phoebe Snow, and Herbie Hancock. He may be best remembered for his jazz signings there: Tony Williams, Woody Shaw, Return to Forever, and especially Dexter Gordon, whom Lundvall brought back from exile in Copenhagen. Tiring of the grind of running a

umbrella. Lundvall, along with Michael Cuscuna, reissued much of the fabled company's great jazz catalog and developed new artists such as Stanley Jordan. In yet another permutation, Manhattan merged with EMI-America to become EMI Records, and Lundvall became president. In April 1988, he left EMI for Capitol Records and took the Blue Note label with him. He continues as president of Blue Note and general manager of Capitol/East Coast. *T.F.*



PHOTOGRAPH: ELENA SEIBERT



**You spent a lot of time on 52nd Street when you were young. What about that time and place influenced you later on in jazz?**

Well, I saw all of the legendary modern jazz players when I was between 15 and 18 years old. I became very involved with jazz as a listener when I was about 13 or 14, and I began to come into New York City. I lived in Cliffside Park, across the river, and I would come into the city with my friends. I had a borrowed motorcycle license from a friend who was older so I could get into Birdland, the Down Beat Club, etc. I got to see Charlie Parker, Art Tatum, Lester Young, Bud Powell, and Monk—all the great players of that period, and a lot of the swing players, too. New York also had certain jazz programs that were on the air in the late '40s, and I used to listen to them as a kid. Every evening on WNEW-AM, I believe, there was an

hour program from the Embers or the Hickory House. Another of those programs had piano trios. So you might have Teddy Wilson one night and Art Tatum the next. My greatest hero was Bud Powell. From the time I was around 12, I was buying every Lionel Hampton record—

I saw all the modern jazz legends when I was between 15 and 18. I used a borrowed motorcycle license to get into the clubs.

78s, you know—and Benny Goodman records and all the swing bands. But I began to hear be-bop and read about it, and I was a kid. I was very impressionable, and it just hit me. Musically, it captured my imagination. I used to trade in soda bottles for the 5¢ deposits and buy 78s that were on sale at a record store that sold used jukebox records.

**Were you one of those guys who got hip to be-bop right away?**

Real fast. When I was about 15, a friend of mine in high school was studying with Bill Triglia, who was and still is a very fine pianist. He played with Lester Young, Stan Getz, and Mingus, and he worshipped Bud Powell. So this friend of mine was playing all this modern piano as a kid, and he gave me an early Bud Powell 10-inch LP. I couldn't listen to it at first. I didn't quite understand what was going on because I was just, at that point, listening to Erroll Garner, Teddy Wilson, some Art Tatum. I lived with this album for a week, and then I never gave it back. We had this big fight. I eventual-

ly gave it back, of course, but then I became completely, totally inundated with the whole idea of modern jazz, and it suddenly became totally accessible. It was like a door opening, you know?

**When you headed up CBS Records, in the '70s, it became known as the big label that was friendly to jazz. What do you think happened between that time in the '40s when it looked like jazz was really going to be the next big music, and the time when you took over at CBS—when jazz was really relegated to the bottom of the barrel in most record companies?**

CBS had always been a jazz-friendly label, frankly—some periods more so than others. When I was a kid buying LP records in the '50s, the only major label that was attractive to me as a jazz listener was Columbia. They had Miles Ellington, The Jazz Messengers, Mingus—they had, well, they didn't have Monk yet, but they had Miles and some other artists that were interesting. There were a number of things that were really much more adventurous for a large label to be doing.

**Are you saying they were up there with Blue Note or Prestige?**

No, not at all. But the label had always maintained a certain involvement in jazz over many, many years. I think that was because of people like George Avakian, John Hammond, Ken Glancy, Teo Macero, and Irv Townsend. Goddard Lieberson was the one who set the standard for everything I've ever tried to be or do in this business. He had a wonderful motto: "To be more, you must do more." He set a standard of excellence that hasn't been matched to this day, in my opinion. It started with the quality of the artist roster and extended to graphic excellence and the most exceptional sales and marketing in the business—under Bill Gallagher's direction. He's one of the greatest marketing and sales executives of all time in our business. He really established branch distribution in our industry. When I first went to Columbia Records in 1960, the A&R staff was essentially peopled with musicians, important ones. Teo Macero, Frank DeVol, Mitch Miller, Bobby Scott, Schuyler Chapin, Mike Berniker, John McClure, David Rubinson, Tom Wilson, Jim Foglesong, and John Hammond were there. I remember the day Hammond brought in Bob Dylan's first record. I remember when he signed Aretha Franklin.

**Were you in A&R at that point?**

No, I was in marketing. Bill Gallagher hired me, and I first worked for an

extraordinary man named Joe Norton, who passed away a few years ago but who was a great teacher and friend. He dedicated his entire life to Columbia Records. All these guys were there in this small building over at 799 Seventh Avenue. (Today, it's the site of a branch of the Whitney Museum of Art.) It was like a family, although it was a big company. Still, in 1960, the record business was much smaller than it is today. We were in a five-story building with a studio on the top floor. You would run from your office up to the studio several times a day, and it was a great environment to work in.

**It really was the dominant company.**

Yes. Goddard Lieberson set the tone. It was a company that would support every area of music with hopefully the most important artists in classical music, country, jazz, pop, and so on. It had a dedication to the arts as well as to commerce. It made it possible to say, "Even though this guy doesn't sound like he's going to sell a lot of records, we'll sign him because he's special and he has something musical to say." Underline that word, *musical*.

**Who did they sign who was along those lines?**

Bob Dylan is a great example. No one thought, at that time, that he'd be a rock star. Monk, Miles, Mahalia Jackson, Pete Seeger, many others. Streisand, in the beginning, was perceived as a "Broadway" artist who probably wouldn't sell in the pop market. In fact, my friend Mike Berniker first recorded her because no one else in A&R would. Mike was the most junior member of the staff, so he volunteered! Goddard did the first serious recordings of electronic music. He did Broadway shows (both musical and dramatic shows), *The American Literary Series* and spoken-word recordings, *The Legacy Series* (albums documenting history—the Union, the Confederacy, the Kennedy years).

**I've talked to a number of the important people behind the scenes at Columbia—John Hammond, Mitch Miller, Clive Davis. How do you see yourself fitting into Columbia's history?**

It's a tough question to answer because I can't really compare myself to those people; they had extraordinary track records. But they each had a great influence on me, and I believe I provided a continuity for the company that followed in their footsteps. Above all, to keep *music* and A&R at the forefront of the company, and then back it with the most creative marketing department possible and the strongest promotion and sales organizations.

When I first started as a trainee in 1960, they wouldn't let me into A&R. The head of personnel at that time asked if I could sit down with Leonard Bernstein and read a score, and I said I really didn't think so. He said, therefore, that I should be in marketing. And that's exactly what happened. I have no regrets about that because I think I'm a very good marketing man, but my passion is music. I believe we did some very innovative marketing in those days: we created the first product management system in the record industry. We started the first college rep program also—actually hiring students on campus to market and promote our records. We created the first midpriced line for catalog album releases as well.

***But do you feel you've left your imprint on the company, like Mitch or Clive or John?***

Not to that degree by any means, but I believe I made some important contributions. And why should I be totally modest about it? My inspirations were Goddard, John Hammond, and Ken Glancy—people with real musical sophistication. Fortunately, Clive wanted the company to be musically ahead of the competition, and let's face it, Columbia was a little late in getting into rock 'n' roll—except for Dylan, The Byrds, Chad & Jeremy, and Simon & Garfunkel—so Goddard and Clive really escalated our involvement in rock, and Clive was the front-runner. Clive made some great signings—Janis Joplin, Electric Flag, Laura Nyro, Chicago, Boz Scaggs, Blood, Sweat & Tears, and more. He actually did carry out a tradition of excellence in a very effective way. I was first able to sign artists around 1974, when I was the general manager of the Columbia label. I began to fulfill my own dream. What I always wanted to do was actually sign artists, not go into the studio to produce them because that was not my background. Some of the things that I did there in terms of the signings hopefully perpetuated a Columbia tradition of seeking out unique artists of real quality and musicality. The more confidence I began to have as a signer, the more active I became in that area.

***Let's talk about some of the people you've signed.***

The first artist I signed, unofficially, was Herbie Hancock. He was still on Warner Bros., and I brought him to Clive, who was still running the company. Herbie had one more album to go on Warners. He was not selling any records with that particular band, but I

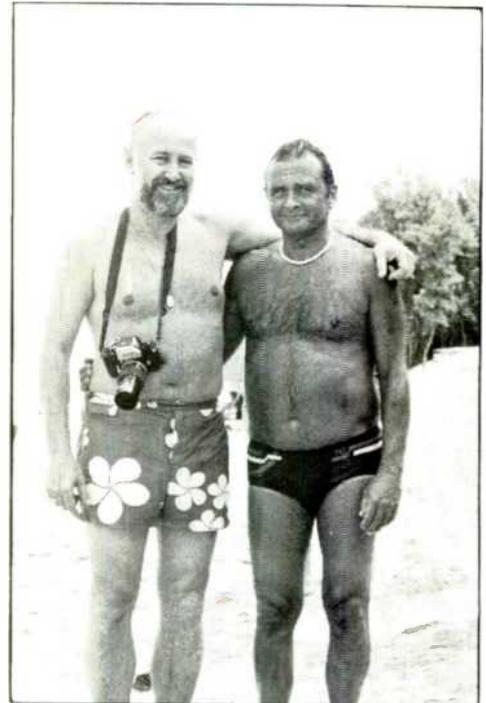
**Herbie Hancock**



©David Gahr

**G**oddard Lieberman set a tone for CBS Records. We would sign an artist if he were special and said something musically. A great example is Bob Dylan. No one thought he would be a big rock star. Streisand was felt to be a "Broadway" artist, not a pop-market seller.

**Lundvall and Stan Getz**



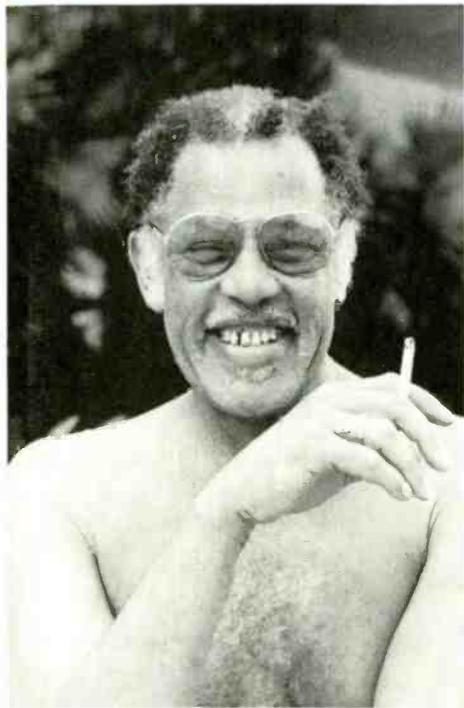
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**Phoebe Snow**



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Dexter Gordon



Dexter Gordon had come back from Copenhagen and he was playing in a club. I knew before his first set was over that I had to sign him. Now, Willie Nelson had been passed on by everyone. I signed him because of his writing and because of his signature voice.

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Paquito D'Rivera



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Willie Nelson



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felt that he could go very, very far—both as a legitimately brilliant musician and in the commercial world. Clive signed him, but I felt very strongly it was my signing because I brought him to Clive. So in a way he was my first signing there. Officially, the first artist I actually signed was Phoebe Snow, when I became the general manager of the Columbia label. It was before her first album on Shelter came out. I was sent the album by her attorney. I was totally stunned by her voice, and I said, "I want this to be the first artist I sign." There was an enormous lawsuit because she was signed to Shelter. But something had happened at Shelter that I don't want to go into—they had breached her contract. We won the lawsuit. I still think she's one of the best singers in America today.

**What happened to Phoebe Snow?**

She was very hot for a while. Unfortunately, her new baby daughter, Valerie, was quite ill. Phoebe devoted her energies to trying to pull that child's life together, and she did a miraculous job. It was a very difficult time for her. Nonetheless, she had three very successful records on Columbia, and the Shelter album was very big; it continues to sell. And then she kind of disappeared. Well, she's ready to come back now, and she's signed to Elektra. I haven't heard a note yet, but I know she's a great singer—all she has to do is have the right songs. Anyway, she was the first artist I officially signed. Before that, I had convinced Clive to sign Bill Evans, which he did. To my great horror, after Bill won a Grammy, he was dropped.

**Why?**

I guess lack of sales.

**They couldn't push him with a Grammy win under his belt?**

That year, he was about the only Columbia artist to win a Grammy, and I was so proud of him. I sat at his table, and other people never even came by to shake his hand, you know? Very sad. But then after Phoebe, I got very, very lucky. I signed Willie Nelson, who had tremendous success at CBS.

**And how did that happen?**

A lot of people had passed on him. In Nashville, we had an interesting situation. Billy Sherrill was the head of A&R then and still is. But he's a very shy man. He likes to spend his time in the studio, and he likes to write songs. He doesn't like to go out and romance artists. So it was up to me to go down to Nashville and, with Billy, talk to different artists and try to sign them.

**Now, where was Willie in his career at this point?**

Well, nowhere. He was on Atlantic Records, and they dropped their entire country roster. It was after he was dropped, and I was listening to those things. I'd been a fan of country music for a long time anyway. I started listening to country when I was a little kid—before I got into jazz. I collected country records, and religiously listened to Dave Miller's *Hometown Frolic* from Newark. So anyway, I liked Willie's writing very much, and I loved his voice, but I didn't think he'd sell many records. Epic Records had passed on him—everyone had passed on him. I said, "This guy is a wonderful writer and he has a signature voice. He may not sell, but we should have him." So I signed him. We had this little tiny reception for Willie, and about 20 people showed up. People in the company actually didn't know who he was. And lo and behold, of course, his first record, *Red-Headed Stranger*, was an enormous success. What happened with that record is really wild. About a month after he signed with us, his manager, Neil Reshin, called me and said, "I want to play his first album for you." I said, "Come on. We just signed a contract. He can't have an album finished yet." He said, "Oh yeah? It's all finished." I said, "What do you mean, it's all finished? You're not bringing something out of a closet that's old?" "No, no, no." So I said, "Okay, bring it in, but this doesn't sound right to me." Neil came in with Waylon Jennings, and I said, "Why is Waylon Jennings here?" And he said, "Well, here's the album, and it's called *Red-Headed Stranger*. It's a story-song record and so on." I started to play it and I saw—well, this was not a produced record, you know. It sort of sounded like it was done in a living room or in someone's garage, but it was really special and quite wonderful. Waylon just sort of jumped on my desk and said, "Look, this is the way Willie Nelson should be recorded. The problem is he's had producers and that's not what he's about." I was very suspicious. I felt, "Oh, come on. I'm being double-teamed here." I said, "Let's listen to more of it." I listened to the rest of it, and I said, "This is something for collectors. I mean, this is really a beautiful record. I love it, but it's not at all commercial. I'll send it down to Billy Sherrill in Nashville." I was trying to be cool about it. I brought the record home, and I really fell in love with it. Meanwhile, Billy Sherrill heard it, and two days later, he called and said, "Man, this is terrible. This is like a demo." I said, "Yeah, but it's very special at the same time." Then I got a call

from Willie saying, "This is what I've wanted to do all my life." So I called a meeting with the whole company. This wasn't more than my third or fourth signing, you know. We got through all this, and no one was really commenting very much. Of course, it became an enormous success. It sold about 2½ million records or more. The next record he came in with was a tribute to Lefty Frizzell, which was another one where I was tearing my hair out saying, "You're going from one obscure project that was enormously successful to something even more obscure, and who's going to buy this?" I'll tell you exactly what happened. After *Red-Headed Stranger* became a very big success, we had a convention up in Toronto, and Willie performed. He was wonderful. So I got back from the convention, and Neil Reshin called again and said, "I have Willie's new album." I said, "This is impossible. You just left Toronto. What do you mean, a new album?" He said, "No, it's all done." I said, "When did he record this record?" Neil said, "On the way back from Toronto, there was a layover in Houston of about five hours before he went to Austin. They went in the studio and made the album."

#### *You're kidding.*

No. Absolutely serious. *To Lefty from Willie*, it was called. I said, "Neil, listen. How much did it actually cost to make this record?" He said, "Something like \$3,000." I said, "Well, look, maybe they could have spent another \$2 for a can of oil because the bass drum pedal is squeaking all the way through this record." So they had to remix the entire album. Then, not long after that, Willie came out with the *Stardust* record, and everyone in the company went crazy saying, "How can you do this? These are old pop standards from the '30s and '40s. How is this going to sell?" Of course, it turned out to be the biggest album Willie ever had—5 or 6 million copies!

#### *What does it take to get people to trust an artist?*

Well, after that, I learned a great lesson that was obvious to me when I was a fan buying records—the artist is usually either ahead of the public or knows what his public will accept. It takes more than one 2-million-selling record, though. Sometimes. Because you go from a 2-million seller to a Lefty Frizzell record, which was not a comparatively big seller at 3 or 4 hundred thousand. These things happen in the business all the time. You're hoping to be able to guide the artist. But you can't do that with real artists, you know. With real

artists, you have to let them go the way they feel they have to go.

#### *Who was your biggest disappointment?*

There were several. I signed Bill Withers, who is a kind of genius and a true original. While he sold well, his biggest hit was "Just the Two of Us," a single I let him do for Grover Washington, Jr. on Elektra while he was signed to CBS! I also signed Stephen Stills, who had a big first album on Columbia, *Turn Back the Pages*, and then two or three albums that died. There was a girl who I had heard on a record that I thought had a wonderful voice. Al DiMeola came in—he was another artist whose first record I had made—and he brought in a tape by a girl. It turned out to be the same artist I'd heard. It was a girl named Googie Capolla. Only musicians know about her. She has a wonderful, wonderful voice and I was wildly excited about her. Young, very shy girl who had a very soulful voice. She had been singing back-up for a lot of people. She had done a lot of gospel things and was very religious. Her husband did a lot of writing and was a keyboard player. It never happened. It was a real disappointment because I thought she was so special. I also felt, at the time, that Jon Lucien had something very special, but his star never materialized as it should have.

#### *Shall we move into the jazz area? I remember all the fanfare when Dexter Gordon came back in '76. How did that all come about?*

I was always a great, great fan of Dexter's, but I had never seen him play. At the time, he was not playing publicly, and then he went to Copenhagen. I went to John McLaughlin's wedding at the Hilton Hotel, and my friend Stan Snyder, who was in the sales department at Columbia, said,

An artist is usually ahead of his public or knows what they will accept. A real artist will have to go his own way.

"I just found out that Dexter Gordon is playing tonight for the first time in the city. He just came over from Copenhagen." So I went to John's wedding, and I dashed over to the club. Dexter was just playing his ass off. Before the end of the first set, I said to Snyder, "We have to sign him." I went up to Dexter after the second set, and I said, "I'd love to sign you to Columbia Records." Well, he couldn't really believe it. The next day, he came to the office with his

lawyer and we made a deal. The nicest thing that happened was that I got a call about a week later from Ahmet Ertegun at Atlantic, and he said, "This is one of the best signings. I wish we had done it. For Columbia to sign Dexter Gordon is just brilliant." I said, "He's obviously not someone who is likely to have a gold or platinum album." Ahmet said, "But he's one of the great ones, and you signed him!"

**Well, how big of a risk was that financially?**

It was not a big financial risk, but that's not the point. The fact that Ahmet said this is a great musical decision ... here's a legend, a great player, and Columbia Records, this great big monolithic company, has signed a guy that normally would record for a small company. As a footnote, Dex has become a lifelong friend, and he's

one of the wisest, most literate, and original human beings I've ever known. **Were you thinking about signing more jazz artists at that point?**

Oh, sure. I had signed a few of them, but Dexter may have been one of the first straight-ahead jazz artists I signed. There were fusion artists—I had signed Return to Forever, Al DiMeola as a solo artist, Bob James, Billy Cobham, Hubert Laws, George Duke. That whole movement in music was happening and selling records, also. But I wanted very badly to sign some straight-ahead jazz artists and some avant-garde artists who were not necessarily in the commercial mainstream of the fusion movement.

**Would you consider Arthur Blythe in that group?**

Sure, yeah. He came afterward, but I signed him. I signed Tony Williams, who at the time was doing kind of a fusion thing and had done Tony Williams' Lifetime before that. The first record he made for us was with a small electric kind of group. It did very well. I signed Woody Shaw after Dexter—James "Blood" Ulmer, Max Roach, Freddie Hubbard, McCoy Tyner—and from Cuba, I signed Irakere, the first band to have an album come out in America since Castro came to power, and Paquito D'Rivera as a solo artist.

**What was the concept behind signing these more avant-garde, not mainstream, jazz players? Did you really**

**think you would have a shot with any of them?**

I didn't concern myself with that. We developed a very strong jazz roster at Columbia Records—one that was also commercially strong. The idea, essentially, was that if you had people like Bob James, The Mahavishnu Orchestra, Weather Report, Return to Forever, Maynard Ferguson, those artists were selling records almost as well as pop artists were during that period. I felt that if we could make the right kind of deal for some really wonderful mainstream and avant-garde artists, it'd be terrific for the company. And the fact that they would be under this umbrella of commercial success would help them to sell more records, which indeed it did. I could showcase them in front of the sales force at a convention because here was Al DiMeola, who was like a pop star, and here was Dexter Gordon. It was more acceptable to the people who sold and promoted the records because they were dealing in a more commercial context. I believe I helped to develop the strongest jazz roster of any major record label during that time, and this certainly was part of whatever legacy I left there. I also greatly strengthened the country roster, expanded the company on the West Coast, and we started a new label, Portrait, which I played a big role in launching. I kept the original cast album area very active with *Annie, Barnum, On the Twentieth Century*, and others. I also wanted the company to be involved in contemporary Latin music, which I dearly love, so in addition to Irakere and Paquito, I signed Eddie Palmieri and The Fania All Stars.

**Why did you leave CBS in '81 for Elektra/Asylum?**

Only because I was becoming bored, and I wanted to get much closer to the music and the creative process.

**You were bored with signing artists?**

No, no, no. CBS had become extremely large, and my responsibilities included manufacturing both the Columbia and Epic labels, the Associated labels, Portrait Records, the publishing company, and Masterworks. I mean, I had the entire thing—the distribution company, all of this essentially came under me. It was wonderful, but my thrill in the business came from two areas: The creative side—signing artists and working with artists—and the marketing side. I didn't get a tremendous charge out of dealing with manufacturing, endless budget meetings, trips to the 35th floor to make presentations, or making speeches 10 times a year at conventions. I was in my early 40s, and

I wanted a new adventure. Walter Yetnikoff appointed me president of the division when Irwin Segelstein left, and for five years, I was the president of C.R.U., the U.S. division of Columbia. It was exciting. It was wonderful. It was prestigious—all of those things. But after a while, it became—well, I shouldn't say boring, but you were inundated by the size of the operation, the amount of responsibility you had, and the fact that the things you loved most about the business you were not able to be involved in as much as you'd like to be. It was tearing me apart, but we were doing amazingly well: 1978 was the biggest profit year in the history of the company. Then in 1979, the company completely collapsed—the whole industry did. The numbers kept getting worse, and I had already fired 300 people, which was horrifying. I couldn't stand it. It was horrible—closing factories, all that stuff. At the time, John Backe was president of CBS. We'd have these planning meetings, and he'd come running in, panicking because the television network wasn't doing that well either. Looking straight in my eyes, he said, "You have lost control of your company." I looked at him and said, "I can't believe this. Have you looked around the rest of the record industry? Every other record company is on their ass and losing money—we're still making a profit!" I said it nicely because I didn't want to say anything more than that. I felt I was about one day away from being fired. Then he had me out for lunch about a week after that because I was panicky, I was totally panicky, and he said, "Look, you're really one of the best record executives. I know the industry is not doing well, and we're not doing well, but I have a responsibility to the stockholders and you've got to pull this thing together." I said, "I'll do everything within my power." So I spent the next year just doing the most simplistic of cost-cutting exercises. The following year, our profits more than doubled, and Backe, while we were reviewing the numbers, was absolutely stunned. He said, "This is the best management job I've seen in my entire career in business." So we did an amazing job, but we did the most simplistic things. They were not easy; we had to let lots more people go, you know. But we basically took all of our budgets for the year and said, "We're going to spend very little on advertising. We'll just do promotion." Fortunately, we had a good release flow.

**How did the artists feel about this?**

They were surprisingly supportive.

I left CBS because I was not as involved with the artists as I wanted to be; having to let people go in the 1979 crunch hurt.

They knew what the industry was going through. It was not just CBS. If it was only CBS, they would have been killing us. Anyway, the following years were very good, but I became less and less happy.

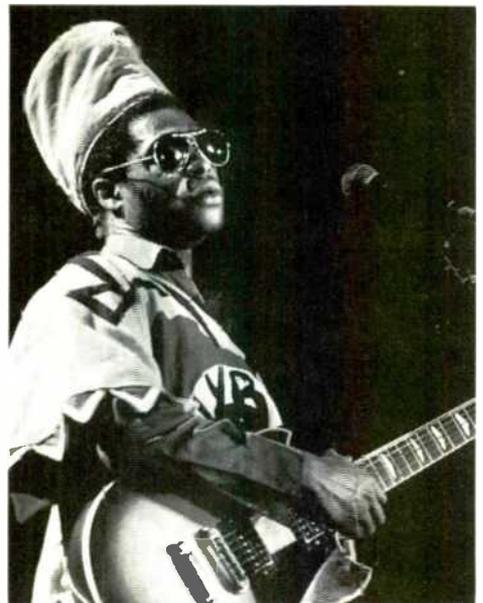
**How was Elektra different?**

I felt everything that CBS represented when I walked in the door in 1960. Warner Communications really represented with their three separate entrepreneurial labels: Warner Bros., Atlantic, and Elektra. Those labels were run by creative people who had a feeling for music. All the things that made CBS Records important to me when I was young . . . so much of it was gone. When my contract was just about over, I went into Yetnikoff's office and said, "I'm leaving to work for Joe Smith [at Warner Communications]." Yetnikoff thought I was crazy.

**Let's talk about some of the people you signed at Elektra/Musician.**

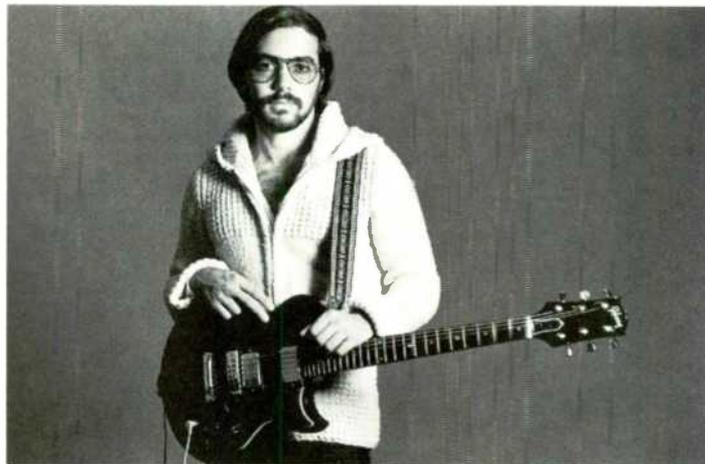
It was a very broad-based roster for a jazz label—everything from historic records by Bird, Dizzy, and Lennie Tristano, to commercial jazz by Lee Ritenour, Eric Gale, and Tom Scott, to straight-ahead jazz from Dexter and Woody Shaw, and the avant-garde group Material (which included Bill Laswell) and Chico Freeman. I also made first albums by Bobby McFerrin, Kevin Eubanks, Sphere, Steps Ahead, and Bill Laswell. Elektra/Musician was my first opportunity to conceptualize a label that totally had my imprint. It was obviously a jazz label. I said, "What is this label really going to be about? If it's about my own personal tastes, totally, then it will be very narrow. It has to be commercially successful. It can't lose money; otherwise, it won't live very long." So I came up with the idea—which I happen to think was a very good idea—that the label should be not *my* concept but the musicians' concept, because a lot of artists have different points of view musically. I said the label should be essentially what I did at CBS, which worked. We had commercial artists—like Return to Forever, Bob James, and all of that—and we had pure jazz artists. They coexisted because they were not put on a jazz label, they were on Columbia Records. Every musician has his own concept, so why not build a label around the artistic vision of each artist—not narrow-cast it, but position it so it can encompass anything we want to do so long as it's basically jazz? I allowed only the musicians to write their liner notes. I did things like, on the very last cut of an album, I would have an artist talking about his music. This was a

**Steel Pulse**



© 1988 Ron Delany

**Al DiMeola**



© David Gahr

**Miles Davis**



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The Elektra/Musician label was one where the musicians' concepts and artistic visions built up the label, so that we could encompass anything as long as it was jazz. Artists did liner notes or talked about the music at the end of an album.

**Woody Shaw**



c1981, David Gahr

I always wanted to be in the pop music business. I never wanted to just do jazz. I'll do jazz when I'm 65 and they don't want me to do pop music anymore. It's exciting to me to try to find unique artists in all areas of music, except for classical, where I am not qualified.

**James "Blood" Ulmer**



cDavid Gahr

little naive, but I did it. I thought it was a nice idea because I thought real serious fans would like to hear these comments. Then I had an inner sleeve with my own little editorial. I'm a little embarrassed about that now, but I said, "I'm going to put myself behind this, speak directly to the consumer, and stand behind my releases."

**Did you feel you were putting your ass on the line with this?**

Yeah. I wanted to. And then I asked everyone who was buying our records to send in letters and notes. I responded to every one of them. I would sit up on Sunday nights until about two o'clock in the morning answering these letters. We had a lot of records that were very highly critically acclaimed. We had others that were demolished by the critics because they were Lee Ritenour or Eric Gale or whoever. The critics don't like these people, you know. They're too commercial. The proudest moment I had was when a year after we were in business, the label was voted the No. 1 jazz label by *Down Beat*. The Critics' Poll!

**You then headed up Elektra/Asylum?**

Yeah, I was the president and Bob Krasnow was the chairman, so we worked in tandem. I reported to Bob.

**How was that different from once again being with a big company in the pop mainstream?**

Well, because Elektra/Asylum was basically a small label compared to CBS Records. I would say, at the time, maybe Elektra/Asylum was doing . . . I don't know . . . \$100 million a year. CBS Records, domestically, did about \$500 million in our best year.

**At Elektra/Asylum, you signed the likes of Howard Jones, Steel Pulse, Rubén Blades, and so forth. Was it difficult for you, making the transition into the pop field from the jazz you were doing at the Musician label?**

No, because I always wanted to be in the pop music business as well. I never wanted to do just jazz. I want to do just jazz when I'm 65 years old and they don't want me to do pop anymore. I mean, I happen to love jazz, but I don't want to do just that. To me, it's not that exciting in terms of the kind of fulfillment I get from the business—trying to find unique artists within all areas of music except classical, which I'm not qualified for. You know, by the way, at CBS I signed a lot of the country artists on the roster. I signed Janie Frickie, Larry Gatlin, Moe Bandy, Johnny Rodriguez, and Willie Nelson, as I mentioned. Rosanne Cash was actually signed by Rick Blackburn, but I sort of did that with him. Still, I would give

**Ruben Blades**



c 1988, Jay Blakesburg Artist Publication

him credit for that. I was always involved with other areas of music. The exciting part about pop music is to see the kind of success that you can really have, to see the public really take to someone, like a Howard Jones. You don't find that easily within jazz.

**How did the Howard Jones thing come about?**

Howard Jones was signed to our English company by a guy who had just started with the company in England. I went over there, and we convinced Howard to be on Elektra in America. So I didn't really sign him for the world, but I saw him first. Everyone else from Warners, Atlantic, and Geffen flew over. We got very lucky. I guess I was a little more convincing than the other people.

**Well, let's go now to your latest big transition into your association with EMI and Manhattan/Blue Note.**

Well, it happened totally by accident. At Elektra, essentially, this is what happened. My boss, Joe Smith, left to start a new Sports Division at Warners. Bob Krasnow and I moved the company back to New York, and we cut the roster down. I went through the same painful exercise I'd gone through at CBS in 1979—you know, firing people who had become friends, dropping artists, all this kind of stuff. Bob and I worked together in New York for about a year and a half, and it was fine. We had a good working relationship and were doing fine, but it was too small a company to have a chairman and a president. Totally by coincidence—and I consider it a kind of miracle in my life—I got a phone call from a California attorney named David Braun, whom I had known for years. He used to represent Neil Diamond and lots of other people—Bob Dylan. He called me at home and said, "Off the record, my friend, Bhaskar Menon [chairman of EMI Music and Capitol Industries], would like to know if you're interested in running Blue Note Records." I met with Menon in New York, and he started with this whole thing about Blue Note. I said, "Look, I love Blue Note Records. It's my favorite jazz label. I have almost every album that's ever been out on Blue Note through the 10-inch days—actually, from the 78 days—but I really don't want to devote the rest of my life to jazz, and frankly, you can't pay me what I'm being paid just to do Blue Note." He said, "Well, now we are really at the root of what I want to talk to you about. I've had on the drawing board for a number of years starting an East Coast pop company. We have Capitol in California, an

historically great company since the '40s, and EMI-America was started about eight years ago, but we do not have an East Coast base. A lot of the talent is in New York, and we're not really competitive." Menon said, "I don't mean a boutique label. I mean a company that can grow into a large one over time—maybe not a huge company, but certainly one that can compete in the New York market. I would also like you to run Blue Note." I said, "I'm your man."

**Why would they put two different types of record companies together? I mean, what does the one really have to do with the other?**

Nothing, except that he knew my passion for jazz. But the most important thing was starting a new pop label from scratch. That's the greatest challenge you could possibly have, and something I had had actual dreams about every night of my life for 10 years prior to this. I would go to sleep at night thinking, "If only I could do it the way I want to do it, imagine how great it would be." So within a month's time, I think, it was all done. I left within the week.

**Were there two totally separate operations with Manhattan and Blue Note?**

No. There were two separate labels and a very small nucleus of people who worked on both.

**How do you decide which of the classic Blue Notes to reissue?**

Michael Cuscuna and I do all of those. Michael knows the catalog better than anyone. I hired Michael immediately as a consultant. Basically, he picks the stuff, but we talk every five minutes.

**What is the commercial and artistic reason for the reissues that have been picked?**

That's hard to answer. We made some mistakes. The first thing we did was put together an initial list of about 24 titles, the very first series of reissues. We decided that we wanted to keep the original cover art. We wanted to press everything in virgin vinyl and digitally remaster. What we tried to do was mix both the classic records on Blue Note—you know, Art Blakey's *One Night in Birdland*, Bud Powell—with a broad spread of artists. So we had McCoy Tyner as well as Jimmy Smith, Horace Silver, Bud Powell, Fats Navarro, etc. I guess we felt that our first obligation was to get a lot of the classic, early records out as well as represent kind of an even spread of what the label is about. I think we did that okay in the first year. I think we made a mistake by coming out with too many reissues in the first year and a half.

**Really?**

Yeah, it was more than the marketplace could really absorb. The first release [series] did great; the second did okay, the third did less well. I think we did it basically right, but the new philosophy for this year is that every month, when we put out a release of one or two new albums, we'll put out one or two reissues. When you go into the retail stores, they can't absorb 10 albums at a time because, after all, Prestige and all these other labels are out with their own reissue lines as well. You can't focus that much on each reissue if you just release a batch, you know?

**Don't they stay out there in the marketplace, though?**

They stay out there, but now you're dealing with Compact Discs, and most retailers are cutting down their inventory on slower moving vinyl discs. When you put them out one or two at a time and you focus your advertising on those records, the consumer then says, "I've got to have this." But if you have an ad that has 10 or 12 albums in it, they can't afford them all.

**I'm still not totally clear on how you decide which albums to reissue.**

Well, some of it's based on nostalgia; some is based on actual past-sales history, most of it's based on artistry. Michael and I will kind of squabble over different releases: Should we do this one or that one? There are certain records that I thought should be out that weren't—the only Milt Jackson record, stuff from J. J. Johnson, the Herbie Nichols and Elmo Hope sides, and so on. They're out now, of course. Ornette Coleman's *At the Golden Circle* is out. That should have been out before, but there's so much to draw from. There are 700 titles. I wanted the Larry Young *Unity* record out, so we released it—sold nothing. No one remembers it except the critics. It's kind of trying things and seeing if they work, you know?

**I'm not convinced that you couldn't just say, "Hey, we'll release 100 a year, and just have them all out there for people to pick and choose from."**

No. The problem is this: The marketplace is changing rapidly because of Compact Discs, and what's happened is that retailers are making more room

With the Blue Note reissues, we thought our first obligation was to get as many early, classic discs out as possible.

The profit margins are much better on Compact Discs, and the market is going over rapidly, with an older audience.

in their stores for CDs and pushing slower moving vinyl out. This means that with classical music, Broadway shows, jazz, and the special interest areas of music, they're not going to order as many records per title of anything on vinyl or cassette. Because EMI was a little bit late in the CD market—not having the manufacturing capacity—we had no CDs to speak of initially. We had five titles out. Now that

we have two plants, everything is coming out simultaneously on LP and CD. **Why have you decided to do all the reissues on CD?**

We may not do them all, but it looks like we will. First of all, the profit margins are much better on CDs. I mean, they're commanding a higher wholesale price. The market is changing rapidly to CD, very rapidly. It's more of an upscale audience, so the classical buyer and the jazz buyer is more sophisticated. A slightly older audience is buying CD equipment and starting to buy a lot of CDs. Within a year, I'm sure the prices will come down, but still, there's a much better profit margin.

**Do you think that people are more likely to buy a reissue if it's on a CD and they can get that step-up from an LP?** It's happening. There's still a lot of people who have to be convinced to change over from vinyl and cassettes. People who do get that first CD player suddenly become quick converts and they start buying everything. I did it myself. I find that I go back and buy things which are reissued on CD—records that I bought when I was a teenager. I'm buying my whole Clifford Brown collection over again, every Charlie Parker, Bud Powell thing that comes out, Tatum, and all the rest. Whenever it's available on CD, I'm buying it.

**Let's talk about Stanley Jordan. How much of a surprise was it that he ended up selling half a million records with Magic Touch?**

Well, it was a surprise but not a great surprise. Bill Milkowsky at *Down Beat* told me about Stanley Jordan, and I had heard about him from other musicians. I called Stanley and said, "How can I hear you play?" He said, "I'm playing tonight, but I go on about two o'clock in the morning." It was at the 52 Grand Club or something, down in

Soho, and I said, "That's okay. I'll come down." He said, "No, why don't I come up and play for you in your office?" So he came up the next day with two little amplifiers and his guitar on one of those baggage carts that they have at railroad stations. He sat in front of me and played one tune. I stopped him and said, "You have a record deal now. I want to sign you to the Elektra/Musician label. Get an attorney and let's go make a record deal." Then he played about four more things. I was stunned. I said, "I've never heard anyone playing with this technique—you sound like three people playing at once. You're wonderful." He said, "I know nothing about the record business. I'm a little distrustful of it. I'm living in Milwaukee, just visiting New York and gigging and playing on the street. I'm just not ready yet." I said, "Okay, let me give you my phone number, and give me yours, please. Let's just keep in touch. When you're ready, I want to be your first record label." A couple months later, he called me at home, and I said, "I'm now at Blue Note Records, and I want to sign you. You'll be the first artist to sign with Blue Note." He said, "I'm coming to New York, and I'm ready. I would love to be on Blue Note." We almost lost him, though. Christine Martin, who had managed Steps Ahead and Mike Brecker and other very good people, was managing him. She brought him over to George Wein and said, "I want to put him on the Kool Festival." Now, I didn't have a record deal yet; we were just starting Blue Note. She got Stanley an opening gig for Wynton Marsalis and Maynard Ferguson at an Avery Fisher Hall concert. George said, "You got 10 minutes, kid. I can't advertise you. You'll come on stage, and I'll introduce you. You'll play for 10 minutes, and then you're off the stage." Because it was Wynton and Maynard—they were both signed to CBS Records, and Wynton, of course, was signed not only to the pop label but also to the Masterworks label—not only was George Butler there, but Joe Dash from the classical department [at CBS]. Stanley got an amazing standing ovation. In fact, he had to tell the audience not to applaud any more because he wouldn't have time to finish his set. I went backstage and, of course, there was Joe Dash and George Butler, and they were romancing Stanley. I said, "Oh!" So the next morning, Stanley called and said, "I know you're nervous, but you were with me from the very beginning, and we have a record deal." I said, "Thank

God. Great!" Then, at the end of the day, he called again and said, "George Butler has postponed his vacation because he wants to meet with me at Columbia Records. I really owe it to my family to meet with him." I said, "Stanley, you can't do this. This morning you said we had a deal, and in this business, a handshake is really as good as a contract. Please don't do this." I was really crazed. He said, "Don't worry, I just owe it to my family." The next day, I met Stanley for dinner, and I said, "Stanley, you can't do this to me." He said "Look, they offered me a pop deal, a classical deal, and a jazz deal—everything. But I don't want to do it because you were there and you were loyal to me." I said, "What do you want me to do?" He said, "I'd like to make a classical record." So I called Brown Meggs at Angel Records, and I said, "Look, you won't understand this, but you've got to give me a yes. I've got this problem . . ." I explained it to him, and I read the reviews over the phone. He said, "The reviews sound wonderful, and I'll do it, but it'll have to be like a solo guitar record. I can't do an orchestral thing until I hear him." So I said to Stanley, "You've got your classical deal." He said, "Gee, that's great." So we made our deal, and he was our first successful artist.

**He was very, very successful, as you say. The flip side of that is you've taken a lot of heat from some who've said the best thing that Lundvall has ever done with Blue Note is reissue the old stuff—that the new stuff has been disappointing, that it has not been in the character of the old Blue Note, which was so adventuresome. How do you respond to that?**

By totally disagreeing, obviously. And I'm not being defensive. My feeling is that some of the best-reviewed albums in the last couple of years have been George Russell's *The African Game* on Blue Note, James Newton's *The African Flower and Romance and Revolution* on Blue Note (which won *Down Beat* record of the year), the Don Pullen/George Adams record, Bobby McFerrin's *Spontaneous Inventions*, Joe Henderson's *State of the Tenor*, the Freddie Hubbard/Woody Shaw records, and James "Blood" Ulmer's record.

**None of those, though, are new artists. They're all artists who were avant-garde 20 years ago.**

Do artists lose the right to be called avant-garde when they're over 30? Pullen/Adams . . . I don't sense that they're old artists. They've been around, but they're not old men.

*They're not, but it's not like signing Don Pullen in 1970.*

Well, you know, I think we will obviously get to that.

*Will you get to that?*

Oh, absolutely, absolutely.

*What about someone like, say, David Murray?*

Yeah. I tried to sign David Murray, but he had three albums left on his deal. You see, the problem is that, first of all, I'm not an enormous fan of David Murray's, but that's neither here nor there. I tried to sign him, but I mean, what's the point of putting out an album and having another album come out on top of it? That really happened with Pullen and Adams as well. When my album came out, there was that Village Vanguard record that came out right on top of it, you know. James Newton was a young, adventurous artist. He's had albums out on Gramavision and other labels, but I don't consider him an old man. We're looking for the most exciting young talent. I started with Bobby McFerrin at the very beginning, and I'm still with him. Michel Petrucciani is another major young talent on the roster. So are Eliane Elias, Bireli Lagrene, and Dianne Reeves. Dianne is the best new jazz singer to emerge in years!

*How are you looking for that exciting new talent?*

By listening all the time. I go out at least one night a week, on average, to listen to talent. I'm listening to everything that comes in. I mean, the idea behind *Out of the Blue*, which was not necessarily adventuresome, was to find the best young players and put together O.T.B., a rotating house band of young kids in their early 20s. These are totally unknown kids. We auditioned about 40 players to come up with the best. Actually, they picked themselves. We started with a couple of guys that we felt were great for the band, and they picked the other players. I mean, they may not be all that avant-garde . . .

*Once again, it's not the real adventuresome music that's always been associated with Blue Note.*

Well, I think Blue Note has had a variety of . . . if you really look at the label in retrospect, yeah, they had the most important, new, innovative artists in music during the time of the label. There were also a lot of mainstream artists that were brought back to the label, like Dexter and Ike Quebec and people like that. There were funk and commercial artists like Turrentine, Lou Donaldson, and so on. So it was a variety of things.

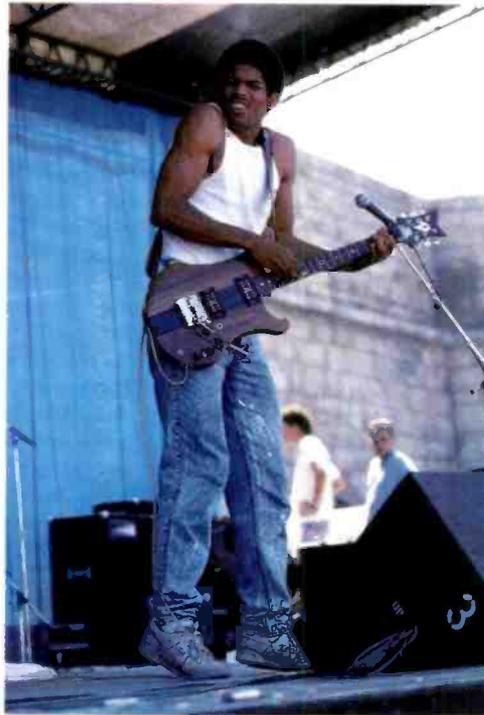
*Here is such a great opportunity to*

Dianne Reeves



©1987, David Gahr

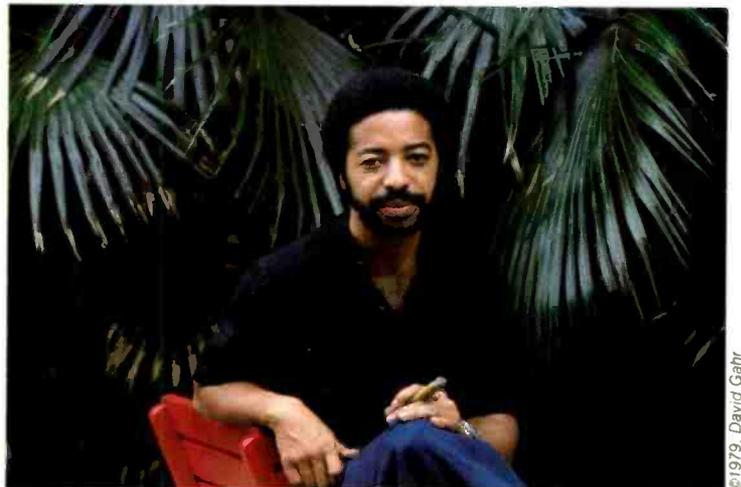
Stanley Jordan



Stanley Jordan came to my office with his guitar and two little amps on a baggage cart. He played one tune and I stopped him and told him he had a record deal. I'd never heard any guitarist use that technique, and I was just stunned. I wanted to sign him immediately.

©1987, David Gahr

Tony Williams



©1979, David Gahr

come up with the next John Coltrane, the next . . .

If we find him, we'll sign him.

**Even if he's not able to do what a Bobby McFerrin or a Stanley Jordan can do, commercially?**

Oh, absolutely . . .

**Do you think there are more Miles Davises and Coltranes out there?**

I think there are original artists out there. I don't know that there's anyone out there making a statement that unique today, in contrast to what was being played or what has happened in the past. If there's someone out there doing something totally fresh and new and exciting, I want to sign them, but I don't know if the music is going to be that much further advanced than what

we hear today. I just signed Bireli Lagrene, and I think he's a genius. He's 21 years old—a gypsy guitarist. He is wonderful and brilliant, but he's not playing new music. He's made records before. He made his first record when he was 13, playing like Django Reinhardt. Right now

he's playing very contemporary stuff. We signed the most original tenor saxophone stylist I've heard in a long time—Rick Margitza. He's going to be a giant, in my opinion. And Tony Williams has an exciting group of young players in his band—Wallace Roney, Billy Pierce, Mulgrew Miller, and Charnett Moffett, who's also signed as a leader on Blue Note.

**But as a jazz fan, as someone who had all the Blue Notes, do you feel comfortable that you're in the tradition?**

I think I'm very much in the tradition. I'm obviously looking for the next exciting thing, so I'm trying to venture into as many areas of the music as the musicians are making statements about. My criteria is not just to do really traditional or commercial records. In fact, I need a balance. I have a couple of commercial artists on the label, but I think they're valid artists. Bobby McFerrin, to me, is a very unique individual, a virtuoso artist. I'm not telling him what to record, he's doing whatever he feels he must do musically. Dianne Reeves had a major commercial success with her first Blue Note album, but she has great artistic integrity and refuses to record "pop" material just to sell records.

**Do you think times have changed in jazz?**

I think so. I think we're in a kind of retrenchment period. I think there are obviously a lot of experimenters out there, like Geri Allen, Greg Osby, Bill Frisell, Steve Coleman, etc., and we've got to sign a few of these so-called M-Base people, too. In fact, Geri Allen just did a very adventurous trio album with Ralph Peterson for us. Also, Osby is playing on a wonderful new Andrew Hill album we made. Andrew was the one artist Alfred Lion asked us to sign. He felt that Andrew was a complete original—like Monk, Bud, and Herbie Nichols—and he was right! A lot of the young players like Mulgrew Miller, Terence Blanchard, Wynton Marsalis, etc. are exploring the bop and hard-bop tradition in new ways, and that's healthy, too.

**How successful do you feel the Manhattan label was before it merged with EMI-America to become EMI Records?**

In all objectivity I would say that in the years that Manhattan existed, few other new labels even came close. We broke Richard Marx to multiple platinum, Robbie Nevil, Phyllis Hyman, and The O'Jays on Philadelphia International, Glass Tiger, R.J.'s Latest Arrival, *Sun City*, the *School Daze* soundtrack, and relaunched Natalie Cole's career to very close to platinum. Also, Bobby McFerrin's *Simple Pleasures* album was on Manhattan, and if you add the commercial success of Dianne Reeves and Stanley Jordan, who were on Blue Note but part of the Manhattan roster, we had a hell of a run in a very short time. A few new artists who are breaking right now on EMI were originally Manhattan signings, like Christopher Max and Vixen.

**Apart from your Blue Note responsibilities, you're also the general manager of Capitol Records in New York. What does this mean?**

Well, apart from running the East Coast office and trying to create a higher level of visibility for the company on the East Coast, I'm mainly involved in signing pop artists.

**Who have you signed so far on the Capitol side?**

I'm wildly excited about a young singer named D'Atra Hicks. She starred in "Mama I Want to Sing" and has a simply extraordinary voice and vocal range. Her album is coming out in June. I also co-signed with Jim Fogle-song one of the most original singer/songwriters I've heard in years, John Andrew Parks III. He's got one foot in country music and the other in the con-

temporary pop world. He's simply a true original. I also signed Dave Koz from Richard Marx's band. He's a wonderful pop saxophonist and composer, and he's got great charisma and stage presence—a star. There's a very exotic young singer/composer in New York, Bemshi, whom Steve Thornton is producing. I think she's another true original and a very sophisticated artist. We also moved Tania Maria over from Manhattan, and her new album on Capitol has been doing very well.

**What about major artists—are you going after them for Capitol?**

Very much so. For one thing, we transferred Grace Jones from EMI to Capitol, and I'm working closely with her on a very strong new album. I also helped to close the Cover Girls deal. Their album on Sutra was just shy of gold, and the new Capitol album is even stronger. I've also done production/songwriting deals for Capitol with Michael Masser and Frank Wildhorn, one of the hottest new composers on the New York scene. He had the No. 1 hit for Whitney Houston, "Where Do Broken Hearts Go."

**Who are your latest "finds"?**

Phil Perry is like a "secret weapon"—maybe the best male voice out there. He's sung on everyone's records from Quincy Jones to Lee Ritenour to Robert Irving's new album. We're making his first solo album, and all I can say is "watch out"! Finally, I just signed Gary Brown, a brilliant young singer/songwriter from New York who recently was with Kool & The Gang. He looks like a movie star and walks in the door once a week, it seems, with another hit song!

**You also have responsibility for world music with Intuition.**

Right. Vera Brandes is truly a wizard in this field and conceived the Intuition label at exactly the right time. Aside from brilliant artists like Hermeto Pasqual and Jon Hassell, she's signed Steps Ahead, who recently had a No. 1 album, and my old friend Eddie Palmieri. We also have an exciting Brazilian discovery, Gonzaga, who's like a new Milton Nascimento.

**So with all the changes that have gone down at EMI and Capitol, you seem very happy.**

It's practically all music, all adventure, and all of the areas of the business and the music that I'm most at home with. Frankly, I've never worked harder or spent as many nights out looking at talent, but this is what I love best, and thanks to David Berman and Joe Smith, I'm doing what I guess I was always meant to do. **A**

I think that we are in a retrenchment period in jazz, but there is a lot of exploration of bop, and of hard bop, in new ways.



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# 1

## DENON DCD-3520 COMPACT DISC PLAYER

### Manufacturer's Specifications

**Frequency Response:** 2 Hz to 20 kHz,  $\pm 0.2$  dB.

**THD:** 0.0015% at 1 kHz.

**Dynamic Range:** 100 dB or greater.

**S/N Ratio:** 118 dB at 1 kHz.

**Separation:** 110 dB at 1 kHz.

**Wow and Flutter:** Below measurable limits ( $\pm 0.001\%$  wtd. peak).

**Analog Output Levels:** Fixed, 2.0 V rms balanced and unbalanced; variable, 2.0 V rms maximum.

**Digital Output Format:** AES/EBU digital audio interface.

**Digital Output Levels:** Coaxial, 0.5 V peak to peak, 75 ohms; optical,  $-12$  dBm at a wavelength of 650 nm.

**Number of Programmable Selections:** 20.

**Power Requirements:** 120 V, 50/60 Hz, 32 watts.

**Dimensions:**  $17\frac{1}{16}$  in. W  $\times$   $5\frac{5}{16}$  in. H  $\times$   $15\frac{3}{8}$  in. D (43.4 cm  $\times$  13.5 cm  $\times$  39 cm).

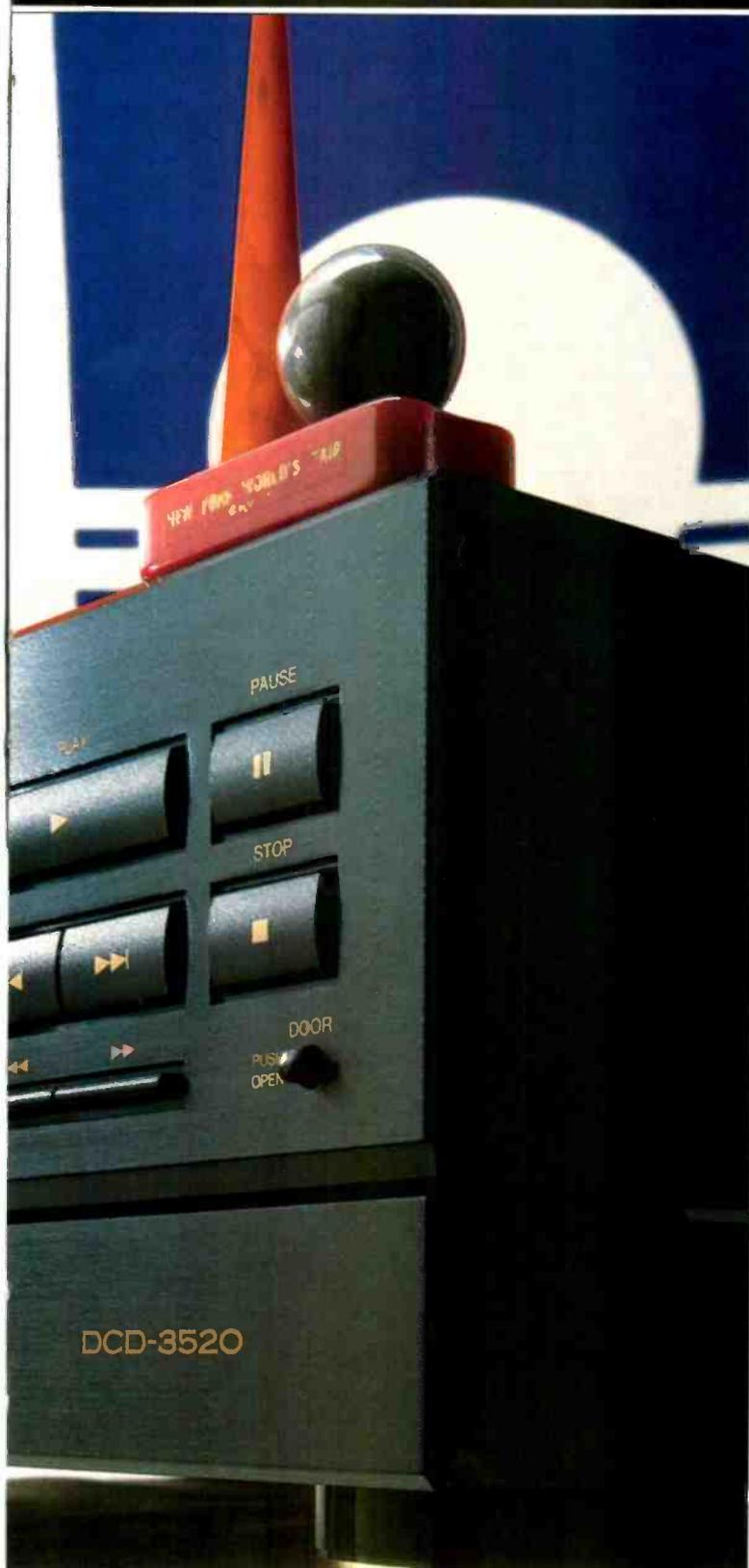
**Weight:** 41.8 lbs. (19 kg).

**Price:** \$1,500.

**Company Address:** 222 New Rd., Parsippany, N.J. 07054.

For literature, circle No. 90





This top-of-the-line CD player incorporates several of Denon's technological advances, not the least of which is 20-bit, digital-to-analog conversion. Why, you might ask, would anyone employ 20-bit D/A conversion in a CD player when Compact Discs themselves contain data in 16-bit format? Denon provides some of the answers in one of their technical tutorials.

"If it were possible to make a perfect 16-bit D/A converter, 20-bit converters would have essentially no benefit. But real-world considerations limit the performance of D/A converters. The additional precision offered by additional bits means that we can more closely approximate the work of a perfect 16-bit D/A. Considered in the abstract, 20-bit conversion can discriminate levels 16 times smaller than 16-bit conversion."

The chief benefit of 20-bit conversion, if properly executed, is to reduce the player's contribution to quantization noise, which is the difference between the original analog values and their digital approximations. To fully realize the benefits of D/A conversion, Denon also uses a 20-bit digital filter. This filter features 110-dB rejection of out-of-band noise and, according to Denon, pass-band ripple held to  $\pm 0.00005$  dB.

As was true of some previous Denon players, the output for the most significant bit (MSB) is hand-trimmed for more accurate D/A conversion. In the DCD-3520, they've gone farther and have adjusted the second-, third-, and fourth-most significant bits. This accounts, in part, for the extremely high signal-to-noise ratio achieved by this model. Denon's unique approach to D/A conversion has been dubbed "Delta" by the manufacturer. Other notable refinements of the DCD-3520 include separate power transformers for the digital and analog sections and a double-isolated laser pickup transport. The unit has a copper-plated chassis with a four-layer bottom plate, glass-epoxy p.c. boards, a second coaxial digital output, and balanced XLR-connector analog outputs.

As for operational features, specific tracks can be accessed directly, as can specific time into a given track. The usual search modes are available, including audible fast search in either direction. Up to 20 selections can be programmed in any order for playback, and programming will be retained in memory for about two days, even if power to the player is turned off after programming. A "Call" button on the supplied remote control will bring up track numbers in the order in which they are programmed. It is possible to have play begin at a specified index number within a given track. Repeat play of a single track, an entire program, or the entire disc is possible. A particular section of a track can be played by specifying start and stop times. The use of an external timer to start and stop playback is also feasible.

#### Control Layout

Only a few major controls and a large digital display area are visible when the hinged panel along the lower part of the front panel is in its closed position. The major controls include a power switch, the disc drawer open/close button, buttons for manual forward and reverse search, automatic forward and reverse skip, "Play," "Pause," and "Stop," and a button that opens the lower hinged panel.

The remote control has two functions aimed at tape recording, "Auto Edit" and "Auto Space," which are not on the unit's front panel.

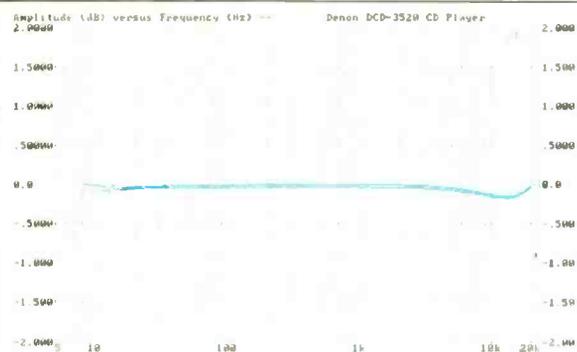


Fig. 1—Frequency response; note that trace begins at 7 Hz. Lower trace is right-channel output.

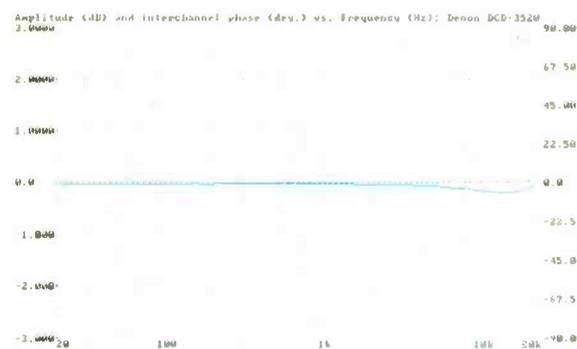


Fig. 2—Interchannel phase difference (dashed curve) and amplitude response (solid curve). Phase difference, in degrees, can be read from right-hand scale.

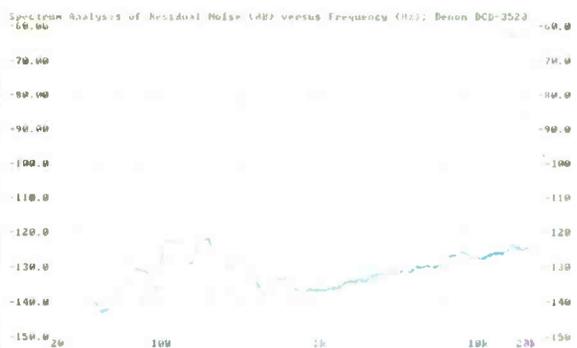


Fig. 3—Residual noise vs. frequency of left channel (solid curve) and right channel (dashed curve) for "quiet" track of CD-1 test disc.

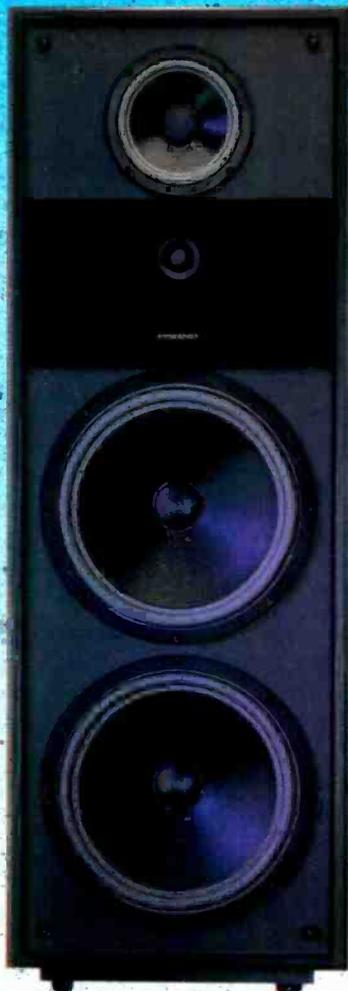
Behind the panel are an "Index" button and a "Time" button. The latter changes the time display from the current track's elapsed time, to the time remaining on that track, to the total time remaining on the disc. Also behind the panel are a programming button, number buttons for specifying tracks—including a "+ 10" button for selecting track numbers higher than 10—and a "Display" button that enables you to turn off some or all indicators in the display area. A headphone jack, line-output level control, and a digital-output selection/defeat switch complete the panel layout.

The supplied remote control duplicates most of the front panel's functions and adds a couple novel features of its own. One of these is called "Auto Edit." Press the button so labelled, and the player automatically divides the CD into two time periods, each approximately half the playing time of the disc. The preliminary owner's manual offered no practical reason for this feature, but I suspect that the thinking had to do with dubbing from a CD to a cassette, when there is more than 45 minutes on a CD (as is true of the majority of CDs released). Volume up and down buttons, when pressed, cause a motor to turn the front-panel volume control. Another button, labelled "Auto Space," inserts 4-S blank spaces between tracks, which is useful for dubbing to cassettes if your tape deck features automatic seeking of subsequent tracks. A "Time Search" button can be used to locate and play a passage by track number and time within





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Dual Source  
Concept*





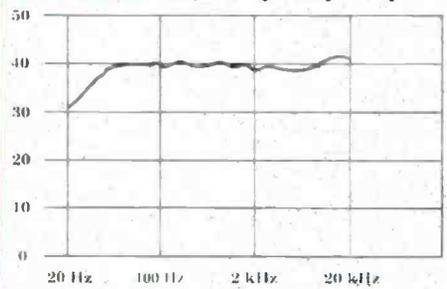
American Acoustics is proud to introduce the **DS Formal Loudspeakers**. Bold. Aggressive. Representing the successful attainment of extremely sophisticated design demands and the highest level of sonic performance.

Meeting the challenge of digital's increased dynamics with outstanding bass response, greater clarity and detail, stereo imaging and transparency.

American engineered. American manufactured. American craftsmanship. You'll hear the difference.

## Dual Source

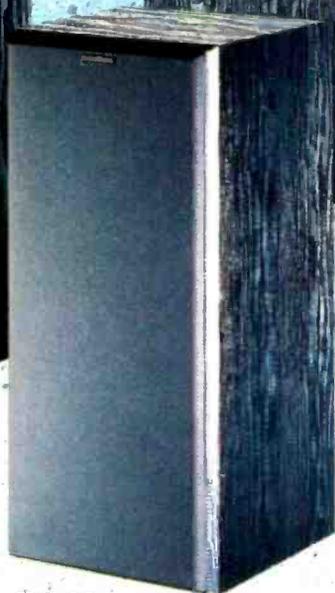
MODEL DS 1212 Frequency Response



**DS 1010**  
dual 10" bass reflex system



**DS 1212**  
dual 12" bass reflex system



**DS 88**  
8" bass reflex system



**DS 66**  
6 1/2" bass reflex system

# B

old in design. Aggressive in performance. Each DS model gives you unique features not found in conventional systems.

**Dual Subwoofers.** Each DS model uses two low frequency transducers to reproduce the lowest bass frequencies. This means each model out-performs its competitors in the area of both low and high level bass clarity. **Improved bass accuracy and greater clarity at all volume levels.**

**Dynamic Symmetric Ports.** All DS models use two bass reflex ports at the rear of their enclosures. Each port has a symmetric aperture at both ends. This allows high velocity bass power to be delivered into the listening room with near zero noise and distortion.

**Direct Sound Table.** The grille frame for each DS model incorporates a complex geometry on its frontal surface which nearly eliminates sound diffraction and provides improved treble. The sound leaving the DS treble driver is broadly dispersed into the listening room for uniform sound distribution. **Treble is crisp and clear with virtually no listener fatigue.**

### Invert Synchronized Midrange

The midrange driver is above the tweeter in all DS models to optimize the time domain response in the critical midrange frequencies. This inverted positioning provides **remarkable improvements in sound imaging and clarity** keeping the arrival times synchronized.

**Density Stabilized Diaphragm Material.** All DS models feature a new hybrid diaphragm material available exclusively from American Acoustics. This density stabilized composite material combines organic and polypropylene fibers to form a transducer diaphragm with unique properties. The diaphragms are further stabilized with a fluid polymer treatment which assures **long-term performance uniformity.**

### Discrete Spectrum Crossovers

The crossovers in all DS models provide several unique performance benefits. The DS 66 and DS 88 use a combination of a progressive midrange crossover and a high-slope treble crossover to achieve **distinct and clear spectral separation** between transducers. The DS 1010 and DS 1212 employ high-slope bass to midrange crossovers which allow the use of dual bass transducers and ear level midrange transducers. This provides a **distortion-free frequency transition** which results in impressive bass performance and extremely clear midrange reproduction.



**American**  
**Acoustics**®



The superior sonic reproduction of today's recorded music required a "no-compromise" approach by American Acoustics' development engineers. It meant new thinking... new technology.

The result is an astoundingly brilliant series of loudspeakers. Hear and feel all the power of rock and roll... the clarity and precision of classical orchestration... the many colors of jazz. Once you hear DS, you'll understand why we didn't compromise.

You won't want to, either.





## American Acoustics®

### *Dual Source*

Model	DS 66	DS 88	DS 1010	DS 1212
System Type	bass reflex	bass reflex	bass reflex	bass reflex
Woofer	(2) 6 1/2", 1" voice coil	(2) 8", 1 1/2" voice coil	(2) 10", 1 1/2" voice coil	(2) 12", 2" voice coil
Midrange			5" sealed w/ferrofluid, 1" voice coil	6 1/2" sealed w/ferrofluid, 1 1/2" voice coil
Tweeter	1" soft dome	1" soft dome	1" soft dome	1" soft dome
Crossover	woofer to woofer/mid, 550Hz; woofer/mid to tweeter, 3500Hz	woofer to woofer/mid, 400Hz; woofer/mid to tweeter, 1.8kHz	woofer to mid, 650Hz mid to tweeter, 3.7kHz	woofer to mid, 350Hz mid to tweeter, 2.8kHz
Freq. Response	42Hz - 22kHz	38Hz - 22kHz	34Hz - 22kHz	23Hz - 22kHz
Sensitivity	93dB	93dB	94dB	95dB
Nom. Impedance	4 ohms	4 ohms	4 ohms	4 ohms
Power Handling	85 watts RMS/170 W peak	125 watts RMS/ 250 W peak	200 watts RMS/ 400 W peak	275 watts RMS/ 550 W peak
Height	21 1/2"	26 1/4"	37 1/4"	44"
Width	10 1/2"	12"	14"	15 1/2"
Depth	10 7/8"	12 7/8"	14 7/8"	17 7/8"

Specifications and product subject to change without notice.

At American Acoustics, we're proud of our products. Nestled in the gently rolling hills of northern Illinois, with a heritage of over a hundred years, we've grown to become a totally vertically integrated manufacturer. We build products with American pride and no-compromise labor. We convert raw materials such as copper, aluminum, steel, and wood to a finished hand-crafted product. Then stand behind it with an industry-leading ten-year limited warranty.

American Acoustics. An American-owned and operated company that believes in hard work, honesty, and quality service after the sale. We're confident you will see these values reflected in our products.

## American Acoustics

One Mitek Plaza, Winslow, IL. 61089  
Phone: 815-367-3000 • Fax: 815-367-3851

I can't recall any player as well shielded against hum and other analog noise as this one. Power-line noise was below 120 dB.

a track (both start and end points can be set) or to set the start and end points for a repeated passage. There is also a "Clear" button that can be used to correct a programmed track setting if you make an error.

### Measurements

Other than a very slight dip in response of no more than 0.18 dB at around 13 or 14 kHz, frequency response (Fig. 1) was extremely flat from below 10 Hz to 20 kHz. The output level difference between channels was negligible. In a second sweep of frequency versus amplitude, I compared the phase of the left channel with that of the right channel at every audio frequency and observed no significant phase difference. Results are shown by the dashed curve of Fig. 2. (The solid curve is simply a repeat of frequency response of the left channel, for reference purposes.)

At the analog outputs, A-weighted S/N ratio measured 117.3 dB for the left channel and 118.2 dB for the right when playing the "silent" band of my CD-1 test disc. I can't recall any CD player that was as well shielded against hum or other forms of induced analog noise as this unit. Figure 3 is a spectrum analysis plot of residual noise as a function of frequency. During this test, of course, no weighting of any kind is used. Nevertheless, even at the critical power-supply frequency of 60 Hz and at its harmonics, the noise level was more than 120 dB below the reference output level of around 2.0 V.

Figure 4 shows how THD + N varied as a function of output level, with respect to maximum (0-dB) recorded level. Here, THD + N is expressed in dB below maximum output level rather than as a percentage. Notice that there is practically no rise in THD + N at the 0-dB level, where analog stages of many other CD players often add their own distortion to the THD figure obtained. Even at maximum output level, THD + N remained around -97 dB, which corresponds to a percentage of 0.0014%. These results were confirmed almost exactly when, a bit later, I measured THD + N versus frequency at maximum recorded level. As Fig. 5 shows, I obtained a reading at 1 kHz of about 0.0015%. Again, I can't remember any CD player that yielded lower distortion figures, though a couple have come close. Further, whereas most players tend to show higher levels of distortion at high frequencies because of out-of-band, nonharmonically related "beats," the THD + N of this Denon CD player never exceeded 0.0055% at any frequency. Although I passed a 20-kHz test signal—recorded on the test CD at 0-dB level—through my spectrum analyzer, the dynamic range of the analyzer precluded my seeing spurious "beats" at any frequency from 0 Hz to 50 kHz, so I saw no point in including a scope photo of the results here.

The CD-1 test disc has a track consisting of 60-Hz and 7-kHz signals in the 4:1 ratio used for measuring SMPTE-IM distortion. I don't usually test this parameter because I have found that a unit's SMPTE IM is usually of the same order of magnitude as its THD. In this instance, however, because THD + N was so very low, I decided to take a spot measurement of SMPTE IM. It turned out to be 0.0045% on the left channel and 0.0040% on the right.

Right-to-left channel separation at 1 kHz was 117 dB, while left-to-right channel separation at the same frequency



Fig. 4—THD + N vs. signal level for left channel (solid curve) and right channel (dashed curve). The rise in distortion at 0 dB is almost imperceptible; see text.

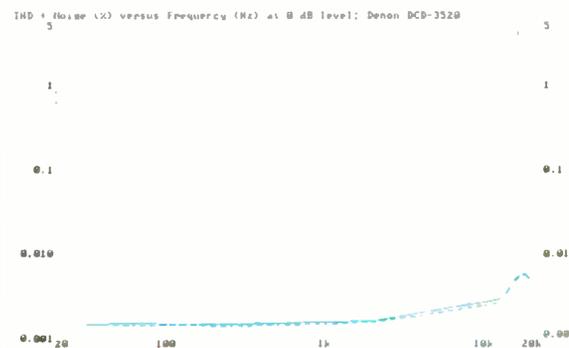


Fig. 5—THD + N vs. frequency at 0-dB recorded level for left channel (solid curve) and right channel (dashed curve). The rise in distortion above 15 kHz is unusually small.

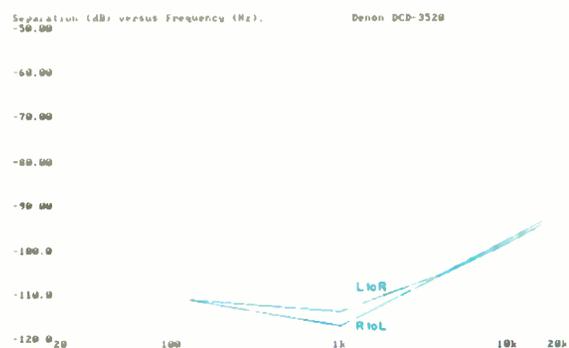


Fig. 6—Interchannel separation.



Motorized main analog volume control. Digitally synthesized AM/FM stereo tuner with 19 presets. 7-band graphic equalizer with Acoustic Memory feature. Record out selector allows separate recording and listening. Video and audio dubbing capability. Cable FM/TV ready. Pre-out and main-in connections.

\* Dolby is a registered trademark of Dolby Laboratories, Inc.  
\* 125 watts RMS per channel, at 8 Ohms, 20-20,000 Hz, .01% THD.



# PHILIPS FR980 ADVANCED FEATURES FOR THE DISCERNING AUDIO AND VIDEOPHILE.

The engineers at Philips of the Netherlands steadfastly refuse to accept the commonly accepted. The result: The Philips FR980.

Arguably the most sophisticated A/V receiver available today.

Not only does the FR980 provide the world's most advanced technology, it also offers an extraordinary array of options to mix and match audio and video signals. The possibilities are virtually limitless.

Philips has designed and crafted an advanced receiver that keeps you abreast of emerging technologies like CD-V. Further, the FR980 incorporates three audiophile-quality listening modes to pamper you with impeccable sonic authenticity.

Beyond the experience of true Dolby® Surround Sound, the FR980 features two custom equalization

modes: Movie mode to make special audio effects come alive. And Music mode with a more gentle equalization to bring out the best in the newest music videos already encoded with Dolby Surround Sound.

With 125 watts\* per channel to drive the main speakers, and 30 watts for both rear surround sound speakers, the FR980 recreates the true theatrical experience.

The world's most sophisticated A/V receiver demands the most sophisticated remote control: a full "learning" type user-programmable remote. It features an alphanumeric LCD screen, and system memory to handle more than 740 different functions from virtually any infrared controlled component, audio or video.

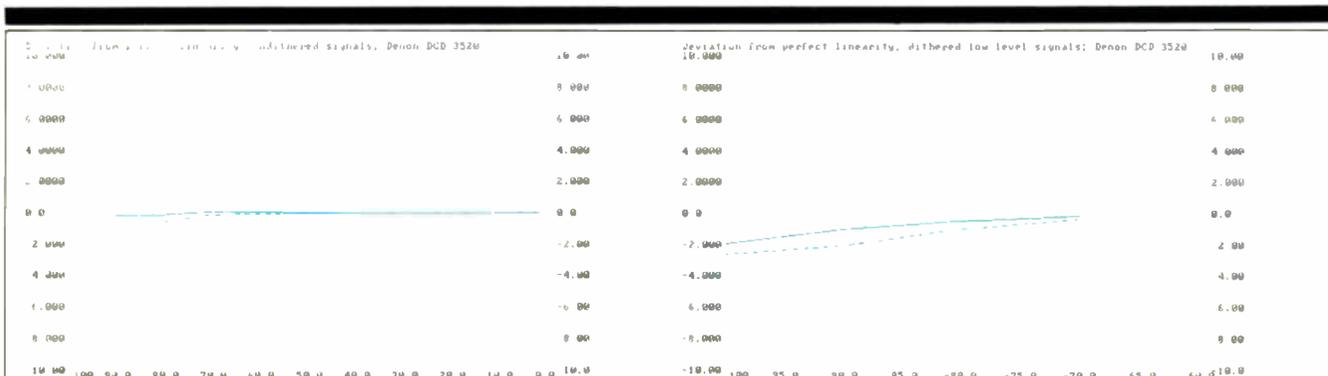
Audition the new FR980 at your Philips audio/video specialist. Call 1-800-223-7772 for the one nearest you.

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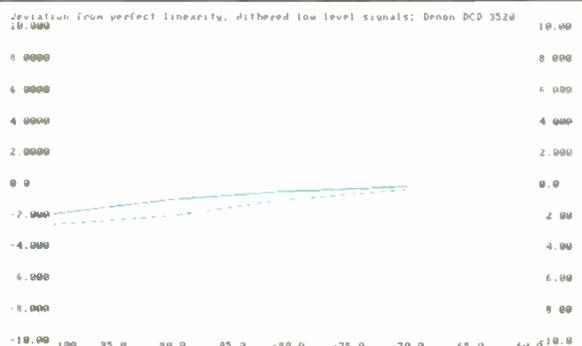


**PHILIPS**

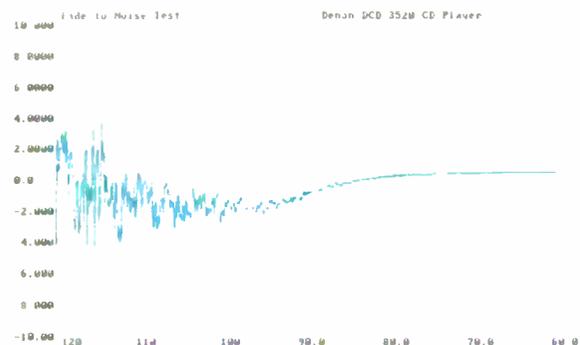
The CD Standard calls for a player to read dropouts up to 0.2 mm in length; the Denon handled dropouts five times that size.



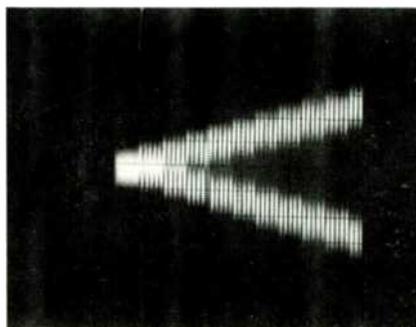
**Fig. 7—Deviation from perfect linearity for undithered, 1-kHz signal was virtually nonexistent in the left channel (solid curve) and only 1.7 dB at -90 dB signal level for the right channel (dashed curve).**



**Fig. 8—Deviation from perfect linearity for dithered signal was only about 2 dB at -100 dB signal level for the left channel (solid curve) and only slightly greater for the right channel (dashed curve).**



**Fig. 9—Linearity deviation for EIA "fade-to-noise" test showed dynamic range to be just over 105 dB.**



**Fig. 10—Monotonicity test shows an almost perfect, symmetrical "staircase" display.**

was 113.5 dB. Separation at this and other frequencies is shown in Fig. 6. Even at 16 kHz, separation remained noticeably greater than 90 dB.

You can take issue with Denon's approach to D/A conversion if you wish. Other manufacturers may, in fact, be able to achieve equally superb linearity in their various approaches to "perfect" D/A conversion. This much, however, must be said about Denon's Delta technology: It sure produces linear output at every level! Consider Fig. 7, which shows deviation from perfect linearity for both channels, using undithered signals from 0 to -90 dB. There was virtually no deviation for the left channel (solid curve), even at -90 dB, and about 1.8 dB of deviation for the right (dashed curve). These are truly excellent results. Further confirmation of the superb linearity exhibited by the DCD-3520 was obtained when I ran my low-level linearity tests, using dithered signals from -70 to -100 dB (Fig. 8). Under these conditions, even at 100 dB below maximum output level, linearity was

off by only 2 dB for the left channel (solid curve) and a bit over 2 dB for the right (dashed curve).

Dynamic range is defined differently by the EIAJ than by the new EIA interim CD Measurement Standard. Using the EIAJ Standard, I obtained a dynamic range figure of 98.2 dB for either channel. Using the EIA method, which involves running the fade-to-noise test available on the CD-1 test disc (Fig. 9), I calculated a dynamic range of just over 105 dB. The dynamic range is determined as the point at which the signal is overwhelmed by noise that is at least 3 dB greater in amplitude than the test signal itself.

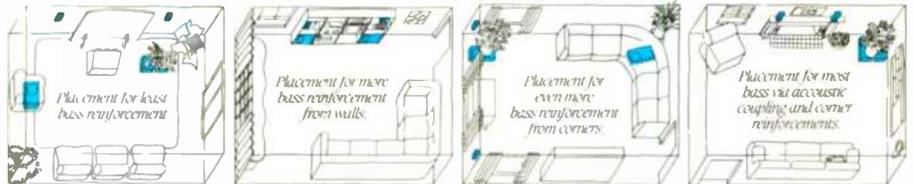
Having obtained such outstanding linearity results and such high dynamic range and S/N ratios, it came as no surprise that the monotonicity test track on the CD-1 disc produced the near-perfect and symmetrical "staircase" display shown in Fig. 10. Notice how the magnitude of all steps—in the positive- as well as the negative-going direction—is identical, and how there is never a reversal in the

# "They Were Designed To Play Music And Make It Sound Like Music..."

This They Do Very Well, In A Most Unobtrusive Way, At A Bargain Price... It's Hard To Imagine Going Wrong With Ensemble!"

Jukan Hirsch  
Stereo Review Sept '88

Cambridge SoundWorks has created Ensemble,<sup>™</sup> a speaker system that can provide the sound once reserved for the best speakers under laboratory conditions. It virtually disappears in your room. And because we market it directly, Ensemble costs hundreds less than it would in stores.



You can put Ensemble's low-frequency units exactly where they should go for superb bass. You can't do this with conventional speakers because you have to be concerned about the upper frequencies coming from the same enclosures as the low ones.

Ensemble, on the other hand, *takes advantage* of your room's acoustics. The ear can't tell where bass comes from, which is why Ensemble's bass units can be tucked out of the way—on the floor, atop bookshelves, or under furniture. The satellites can be hung directly on the wall, or placed on windowsills or shelves. No bulky speakers dominate your living space, yet Ensemble reproduces the deep bass that *no* mini speakers can.

Not all the differences are as obvious as our *two* subwoofers.

Unlike seemingly similar three-piece systems, Ensemble uses premium quality components for maximum power handling, individual crossovers that allow several wiring options and cabinets

At only \$499\*—complete with all hardware and 100' of speaker cable—Ensemble is *the* value on today's speaker market.

Call 1-800-AKA-HIFI'  
(1-800-252-4434)

Our toll-free number will connect you to a Cambridge SoundWorks audio expert. He or she will answer all your questions, take your order and arrange surface shipment via UPS. Your Cambridge SoundWorks audio expert will continue as your personal contact with us. We think you'll like this new way of doing business.

\*In Canada, call 1-800-525-4434. Audio experts are on duty Mon.-Sat., 9AM-10PM, Sun., 9AM-6PM Eastern Time. Fax #: 617-332-9229.



Henry Kloss, creator of the dominant speaker models of the '50s (Acoustic Research), '60s (KLH), and '70s (Advent), brings you Ensemble, a genuinely new kind of speaker system for the '90s, available only factory direct from Cambridge SoundWorks.

The best sound comes in four small packages.

Ensemble consists of four speaker units. Two compact low-frequency speakers reproduce the deep bass, while two small satellite units reproduce the rest of the music, making it possible to reproduce just the right amount of energy in each part of the musical range without turning your listening room into a stereo showroom.

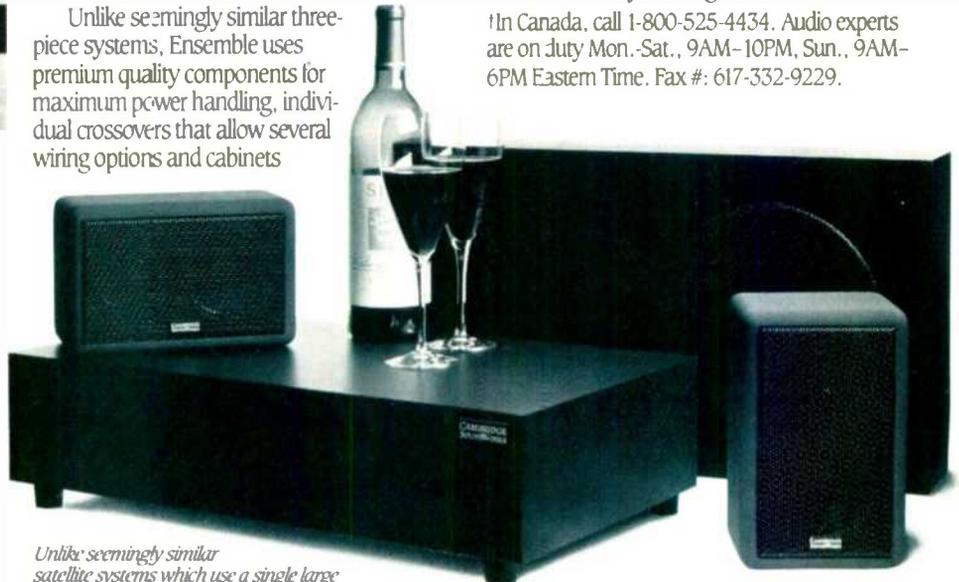
Your listening room works *with* Ensemble, not against it.

No matter how well a speaker performs, at home the listening room takes over. If you put a conventional speaker where the room can help the low bass, it may hinder the upper ranges, or vice-versa.

What Henry Kloss tells his friends

Every time I came out with a new speaker at AR, KLH, or Advent, my friends would ask me, "Henry, is it worth the extra money for me to trade up?" And every time I would answer, "No, what you've already got is still good enough."

But today, with the introduction of Ensemble, I tell them, "Perhaps now is the time to give your old speakers to the children."



Unlike seemingly similar satellite systems which use a single large subwoofer, Ensemble uses two separate, compact bass units. They fit more gracefully into your living environment, and help minimize the effects of the listening room's standing waves.

ruggedly constructed for proper acoustical performance. We even gold-plate all connectors to prevent corrosion. An even bigger difference is how we sell it...

Thousands agree: the best showroom is your living room.

We make it possible to audition Ensemble the *right* way—in your own home. In fact, Ensemble is sold *only* by Cambridge SoundWorks directly from the factory. Listen for hours without a salesman hovering nearby. If after 30 days you're not happy, return Ensemble for a full refund.

Enter No. 17 on Reader Service Card

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MA residents add 5% sales tax.

\*Plus freight (\$7-\$25). Delivery time usually 2-7 days.

There are more expensive CD players available these days, but you'd have a hard time finding one that can outperform the DCD-3520.

direction of any adjacent steps. The frequency of the internal master "clock" of the player was accurate to  $-0.0364\%$ .

Once I completed these bench tests, I turned my attention to this remarkable player's tracking and error-correction capabilities. For this purpose, I used the test tracks on one of two special discs entitled *Digital Test*, produced by Disques Pierre Verany and distributed in this country by Harmonia Mundi. For tracks having linear dropouts, the DCD-3520 successfully handled dropout lengths up to 1.25 mm without any audible artifacts. When playing tracks only 1.5 micrometers apart (the minimum pitch allowed in the CD Standard), dropouts up to 1 mm in length were successfully ignored. Finally, I played test tracks in which two successive dropouts were deliberately encoded. In this case, track pitch was increased to its nominal value. Again, the DCD-3520 was able to handle two successive dropouts of up to 1 mm in length. The CD Standard calls for a player to be able to read dropouts of up to 0.2 mm in length under these conditions, so you might say that this Denon unit did five times as well as the Standard calls for.

The Denon's rugged construction also protected its laser pickup against any mistracking caused by external vibration. I really had to give the player a solid whack on its side before I could induce any sort of muting or mistracking. The intensity of that whack was beyond anything a right-minded owner would ever apply to his player!

#### Use and Listening Tests

I deliberately sought CDs which included solo instruments or at least moments of very quiet musical passages, hoping that during very low-level passages, I would be able to hear improvements when comparing the sound quality of this Denon player versus my reference unit. A recently released Delos disc (*Love Songs*, D/CD-3029), featuring soprano Arleen Auger accompanied on a Baldwin piano, suited my purposes very nicely. I must confess that I could not detect any difference in sound quality between the Denon DCD-3520 and my reference player. However, when I substituted a low-cost portable player and a mid-priced unit that happened to be in my lab, the differences were immediately apparent. The DCD-3520—and, for that matter, my reference player—produced silky-smooth vocals that were closer to reality (I have heard Auger singing "live") than the sounds produced by the low-cost competition. The tests were repeated with fuller, orchestral recordings, and once I knew what to listen for, I was even able to detect cleaner sounds from the Denon when using material that I thought would mask any such subtle differences. Clearly, the differences weren't all that subtle after all.

Denon has brought to bear all its digital know-how in the creation of this, their flagship CD player. More expensive units are available today, but you'd have a hard time finding one that performs better than this. *Leonard Feldman*



“...enjoy heavenly sound in the most comfortable headphones ever invented.”

Rich Warren  
Nationally Syndicated Audio Columnist  
*Chicago Tribune*, December 2, 1988

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# Care Created a Classic:



## Energy 22 Reference Connoisseur.

What started one day as a passionate desire to produce the world's best loudspeaker ended four years later when Energy passed its final gruelling test.

The rest is history.

The success attained by Energy was driven by care. By never accepting *very good*, but holding out for *perfect*.

For the last six years, Energy has complemented the sound systems of thousands of very particular audiophiles throughout the world. We'd like to thank them for their confidence.

We also extend our thanks to the professional studios, musicians and audio reviewers in North America and other countries around

the world who now use Energy exclusively as their reference monitors.

Energy's brilliance of sound is matched only by the brilliance of the cabinets which contain it. Furniture so rich and so varied it challenges the master craftsman – custom matched hand laid hardwood veneers in lustrous oak, American black walnut, rich rosewood, natural teak, red high gloss mahogany and high gloss black grand piano.

When you choose your next speaker system, may we suggest you take the same care. Broaden your musical horizon with Energy 22 Reference Connoisseur. *Also available at more modest prices the Energy 22 Pro Monitors and Energy ESM models.*





# END OF CONVERSATION.

Close your eyes, put on your favorite CD and listen. That's the best way to appreciate the natural, accurate musical reproduction of the new Elite TZ Series reference loudspeakers from Pioneer.

Designed by the same engineering team that developed Pioneer's renowned TAD studio monitors, the TZ Series speakers are designed to accommodate the extended dynamic range, superb clarity and depth of digital source materials.

Pioneer began by developing two entirely new diaphragm materials—ceramic graphite and ceramic carbon. These unique low-mass materials are used to construct midrange and high-frequency dome-type diaphragms that virtually eliminate spurious resonance while providing lightness, stiffness and excellent signal propagation speed. Now critical midrange frequencies and delicate highs will sound clearer and more natural than ever before.

To reproduce the extended low frequencies found on digital recordings, Pioneer developed a twin woofer system that packs a punch you'll feel as well as hear. Opposite-mounted bar-jointed

woofers placed in the center of the TZ's cabinet minimize standing waves while providing accurate low-frequency response to 20 Hz.

The cabinet of the 143-lb. TZ-9

is specially constructed, using 1" thick high-density board and a separate inner baffle that isolates the negative influence of low-frequency



Unique bar-jointed twin-woofer system.

vibration. Corners are specially rounded to eliminate diffraction and drivers are arranged for optimum sound-field intensity. The result is imaging and clarity that bring performances alive with smooth, true-to-life sound.

But enough conversation. If you're interested in hearing more about Pioneer's new TZ Series speakers, call 1-800-421-1404 for a technical white paper and the Elite dealer nearest you.

And let the speakers do the talking.



© 1989 Pioneer Electronics (USA) Inc., Long Beach, CA  
Model shown: TZ-9. Also available: TZ-7.

# 2

## HARRIS XD-001UH DIGITAL AUDIO TAPE RECORDER

### Manufacturer's Specifications

**Frequency Response:** 2 Hz to 22 kHz,  $\pm 0.5$  dB.

**Dynamic Range:** 90 dB or greater.

**S/N Ratio:** 92 dB or greater.

**THD:** 0.005% or less at 1 kHz.

**Sampling Frequencies:** 44.1, 48, and 32 kHz for playback; 48 kHz for recording via all inputs, 32 kHz for recording via digital inputs only.

### Input Levels and Impedances:

Line in, 0.25 V, 50 kilohms; digital in, 0.5 V peak to peak, 75 ohms.

### Output Levels and Impedances:

Line out, 0.25 V, 470 ohms (into 10 kilohms or more); digital out, 0.5 V peak to peak, 75 ohms; headphone out, 32 to 150 ohms.

**Power Requirements:** 120 V a.c., 50/60 Hz, 35 watts.

**Dimensions:** 17 in. W x 4 $\frac{3}{8}$  in. H x 16 $\frac{9}{16}$  in. D (43.1 cm x 11.75 cm x 42.1 cm).

**Weight:** 25 $\frac{3}{4}$  lbs. (11.7 kg).

**Price:** \$1,550 with infrared remote; wired remote, \$160.

**Company Address:** Harris Corp., Broadcast Div., P.O. Box 4290, Quincy, Ill. 62305.

For literature, circle No. 91



Major record companies continue to intimidate and threaten manufacturers of DAT recorders with all sorts of dire consequences if they *dare* to bring consumer DAT recorders to this country. Still, one way or another, DAT recorders are becoming available here for those who really need or want them. Some are classified as "professional" models and are sold only through distributors of professional recording equipment. Often, these pro models are essentially no different from the consumer models sold by the same companies in countries where such threats have not been made. For example, I own a little portable DAT recorder that I purchased in Japan. At a recent AES Convention, I saw the "professional" version of the same machine. About the only difference I could detect between my "consumer" portable and the "pro" model was that the latter was equipped with balanced XLR three-pin connectors, whereas my machine had unbalanced phono-type input and output jacks.

There's even less difference between the DAT recorder I've just tested, sold here by Harris (a well-known supplier of communications equipment to the broadcast industry) and the model sold by Harris' supplier in Japan. One small difference between the tested unit and its consumer equivalent is a tiny receptacle on the rear of the tested unit which accepts a cable from an optional *wired* remote control. (A wireless remote is included in the price of the machine.) The wired remote and provisions for 120-V power are Harris' manufacturing contributions to this DAT recorder.

Although the unit will recognize and play DATs recorded at either 44.1 or 48 kHz, it will not permit digital dubbing of 44.1-kHz prerecorded DATs. Furthermore, it will not permit digital dubbing of any software that has been recorded with the "copy inhibit" flag. In other words, it is configured exactly like all other *consumer* DAT machines available in other countries.

Having said all that, I hasten to add that the XD-001UH is a full-featured DAT recorder. The optional wired remote, which I used, allows you to easily select any track on a DAT. "Start ID" subcodes and program numbers can be automatically recorded or can be added in post-production work. When these identifying data are used to locate desired tracks, the deck can be made to start play immediately or to go into standby, ready to play the track when commanded. Other features include high-speed music search, tape scan (which allows you to preview the first 8 S of each track), a multi-function counter (which displays elapsed time, remaining play time, or playing time of the current selection), high-speed audible cue and review, timer recording and playback, and optional remote start/stop capability from a suitably equipped console. The unit I reviewed was also packed with the wireless remote control normally supplied with this machine.

#### Control Layout

A power switch, "Phones Level" control, timer switch, and stereo headphone jack are all mounted at the left end of the panel near the cassette drawer. Major transport controls are found beneath the drawer, and an elaborate display area is to the drawer's right. This display has a pair of bar-graph level meters plus indicators for time, sampling frequency,

program number, program cueing, start and skip ID, search, "Caution," and "Copy Prohibit." A "Memory" indicator shows up in the display when the "Memory" button has been pressed to allow rewinding to the 0 minutes and 0 seconds point on the counter.

Numbered buttons, beneath and to the right of the display, are used in conjunction with a "Start" button for direct access to any program number. Program-number "Clear" and "Start" buttons are a little further to the right. Beneath the program-number keys are buttons for "Display," "Counter" ("Reset" and "Memory"), "Start ID" ("Auto," "Manual," and "Erase"), and program-number "Mark," plus two buttons and a switch for "Skip ID." Also found here are an input selector (for digital and the two analog inputs) and the sensor for the wireless remote. Above the sensor is a concentrically mounted pair of record-level controls.

The rear panel of the Harris XD-001UH is equipped with unbalanced analog input and output jacks as well as a digital input and a digital output jack.

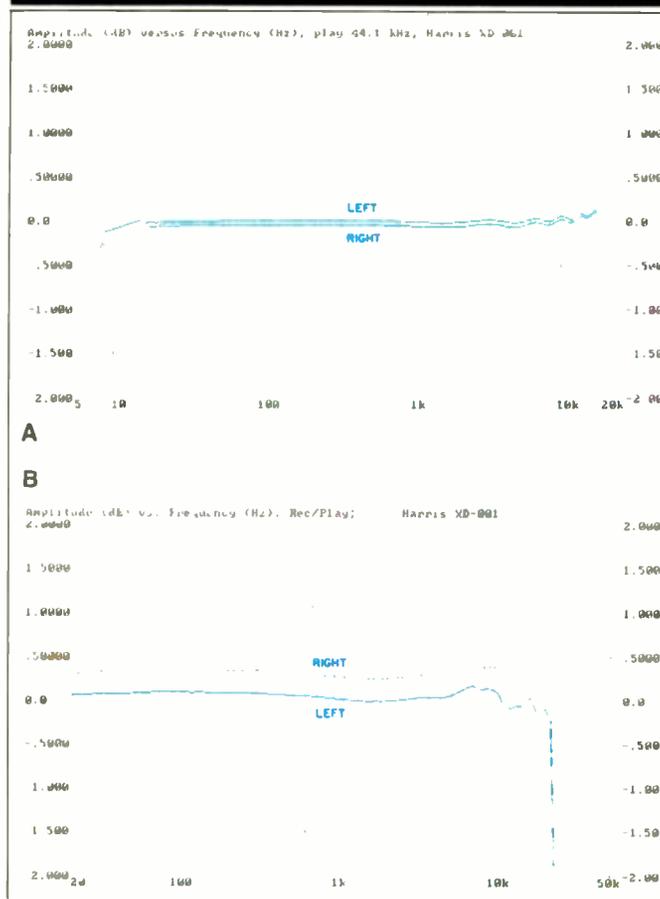
The optional wired remote duplicates the number keys found on the front panel, in addition to "Stop," "Play," and "Pause" buttons for the tape transport, and cueing "Clear" and "Start" buttons. "Start" allows you to initiate play of any selection after it has been cued up by the other controls; it also allows you to pause at any time during playback. "Local" and "Remote" buttons on the current version of the remote (not shown) determine whether the XD-001UH will be primarily controlled from its front panel or from this remote; most functions, however, can be used from either the front panel or the remote, regardless of this switch's position.

#### Measurements

Having now had an opportunity to test several DAT components, both players and recorder/players, I am gradually formulating what I hope is a reasonable and comprehensive set of tests with which to define the performance of these amazing machines. In this respect, I am in what amounts to uncharted territory. An EIA committee is only now being formed to develop standards for measuring DAT recorders, and the IEC (International Electrotechnical Commission), on which I serve as a U.S. delegate, is also still in the early stages of developing a standard. So, I am pretty much on my own, and if any of you have any suggestions, I would welcome them.

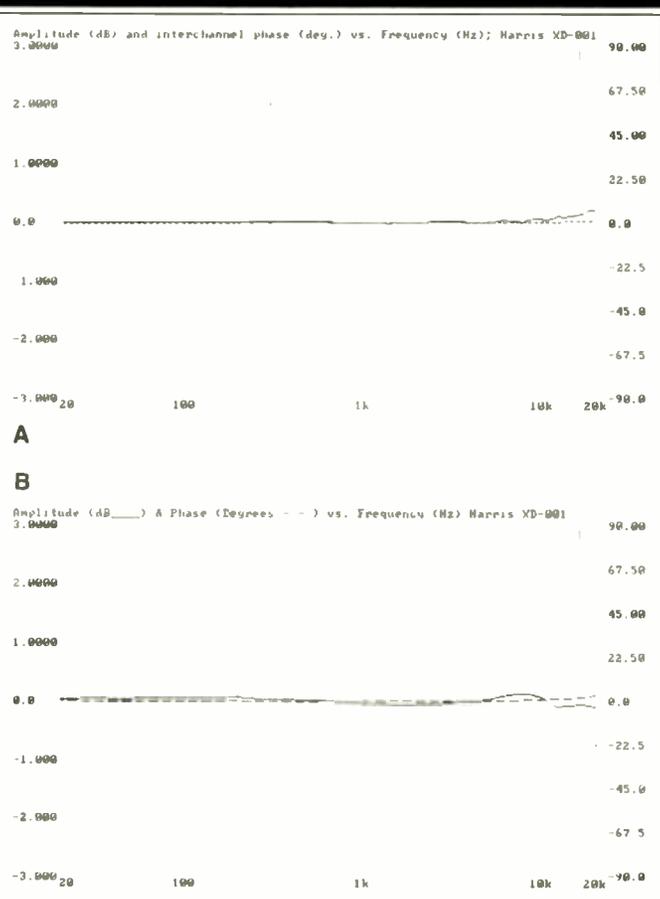
It seems to me that in measuring a DAT recorder that has both record and playback capability, it would be interesting to determine how closely an analog recording (made at 48 kHz) approximates recordings that are digitally generated. As readers who have been following my DAT adventures know, I now have a DAT test tape (at 44.1 kHz) that is the digitally generated equivalent of the CD-1 disc I have been using to test CD players. Thus, I am able to compare playback results of this tape with playback of the same tracks recorded and played back via the analog inputs and outputs of a DAT machine. The latter recordings are, of course, made at 48 kHz. As you will see shortly, the differences in final performance between recordings made with these two techniques, while not great, are nevertheless quite measurable.

At heart, Harris' DAT deck is a consumer model but a full-featured one, with time displays and full control of subcodes.



**Fig. 1—Frequency response for playback of test tape prerecorded at 44.1 kHz (A) and for playback of same signals recorded via analog inputs at 48-kHz sampling rate (B).**

Figure 1A shows the frequency response of the XD-001UH when it simply played back my prerecorded CD-1 test tape. A slight rise in response, amounting to no more than +0.23 dB, is evident at 20 kHz, as is a slight amount of ripple—no doubt caused by the anti-aliasing filters ahead of the outputs. By contrast, when a recording of the same frequency sweep was made through the analog inputs of the DAT recorder, response differed somewhat at the high end, exhibiting a slight rise in the region from 5 to 10 kHz and a very slight attenuation of around -0.15 dB at 20 kHz (Fig. 1B). In this plot, I extended the horizontal axis to 50 kHz in order to observe how steeply response drops off above 22 kHz. (The response for the right channel, virtually identical with that of the left, has been deliberately shifted from the 0-dB axis for the sake of clarity.)



**Fig. 2—Interchannel phase difference (dashed curve) and frequency response (solid curve) for playback of prerecorded test tape (A) and for playback of same signals recorded via analog inputs at 48-kHz sampling rate (B).**

Playback of the same frequency sweeps from the prerecorded test tape yielded no measurable phase shift between channels, as indicated by the dashed curve in Fig. 2A. (The solid curve is simply a repeat of the frequency response data shown in Fig. 1A.) Again, confirmation of the slightly altered response obtained by first recording the sweep through the analog inputs is evident in Fig. 2B, as is the introduction of a very slight amount of phase shift (no more than about 2°) between channels at 20 kHz. This slight phase shift must have been caused by the analog input stages that were not involved in the playback-only tests in Fig. 2A. A much more substantial difference was noted between the two modes of operation when S/N ratios were measured. During playback of the "silent" track of my prerecorded

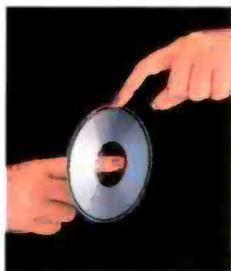
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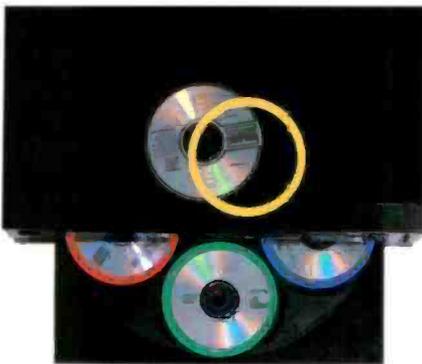
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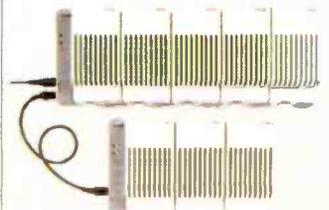
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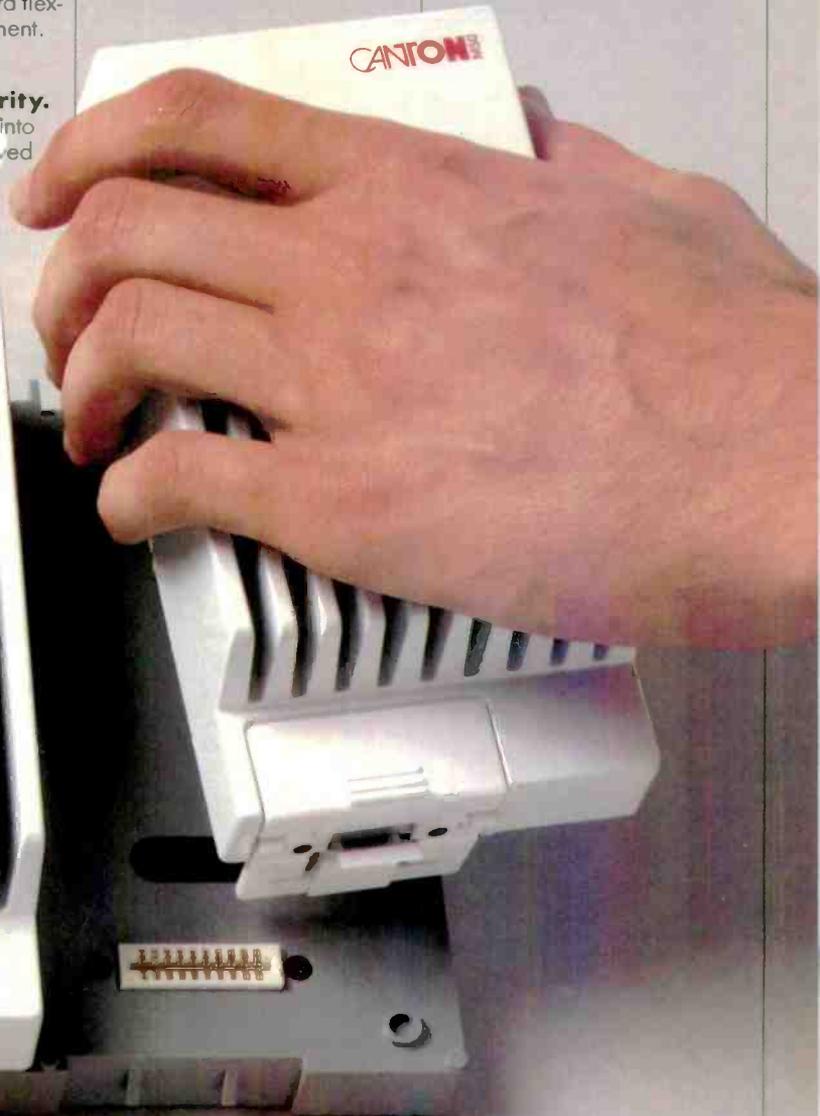
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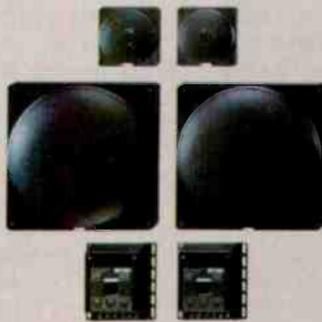


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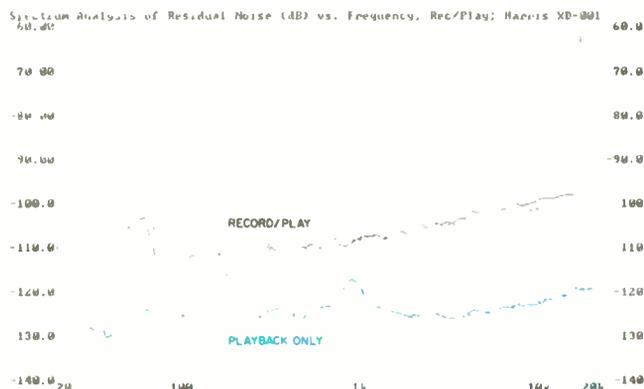
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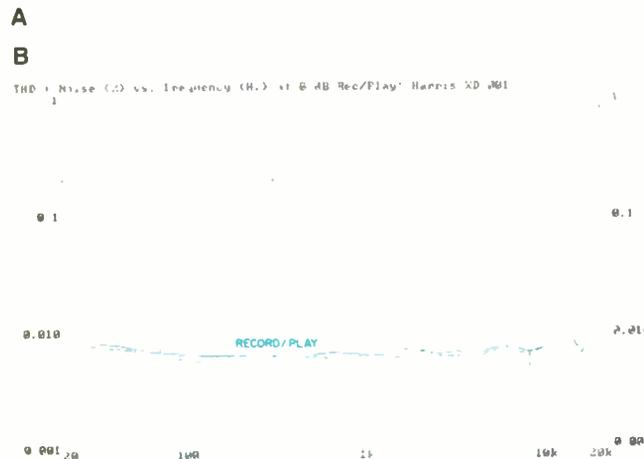
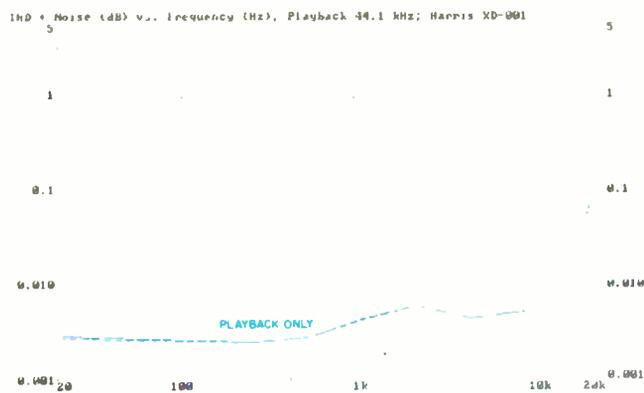
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# CANTON

Distortion is reasonably low until the meters reach +4 dB. Only then does the signal hit digital's brick wall of distortion.



**Fig. 3—Unweighted spectrum analysis of residual noise for playback of prerecorded test tape as well as record/play of same signals. Solid curve is for the left channel and dashed curve for the right.**



**Fig. 4—THD + N for playback of prerecorded test tape (A) and for record/play of same signals at 0-dB recording level (B); see text. Solid curve is for the left channel and dashed curve for the right.**

(44.1-kHz) CD-1 equivalent test tape, S/N was an impressively high 110.5 dB on the left channel and 109.8 dB on the right. When I recorded the same "silent" track onto a DAT via the analog inputs of the XD-001UH, using the actual CD-1 Compact Disc as my source, that section of the tape had an S/N ratio of 92.5 dB on the left channel and 86.6 dB on the right in playback. So much for the recording industry's argument that analog recordings made on DAT recorders would be "clones" of the digital originals! (All S/N measurements were referred to the 0-dB reference output level of 2.09 V and were made using an A-weighting filter.) It is not possible to say with certainty how much of the decrease in S/N was caused by the input stages of the DAT recorder and how much was attributable to the residual noise emanating from the CD player I used to play the silent track of the CD-1. However, since the S/N of my reference CD player is greater than 100 dB, I would guess that much of the difference must be attributed to the DAT recorder's analog input circuitry.

To further analyze the residual noise characteristics of the XD-001UH under both playback-only and record/play conditions, I used my Audio Precision test system to do an unweighted spectral analysis of the residual noise. Results, for playback of the prerecorded test tape and for a complete record/play cycle, are shown in Fig. 3. In the playback-only test, the noise did not rise above -117 dB in any third-octave frequency band. By contrast, when analyzing the complete record/play cycle (again using the analog inputs of the DAT machine), a 60-Hz noise component attributable to the power supply became evident; its amplitude reached a peak of -102.5 dB for the left channel and -100 dB for the right.

Figure 4A shows how THD + N varied with frequency when I played back a 0-dB frequency sweep from the prerecorded digital test tape. At 1 kHz, THD + N measured 0.0045%; even lower values were recorded at lower frequencies, and a THD figure of 0.2% was noted at 20 kHz. When I recorded the same sweep via the analog inputs of the XD-001UH and played back the tape, a higher overall level of THD + N was noted as well as a significant rise in THD at the extreme bass end of the spectrum (Fig. 4B). Under these conditions, THD + N at 1 kHz was 0.007% on one channel and 0.006% on the other. Like me, you may be wondering why THD + N at 20 kHz turned out to be less this time than when the digitally recorded test tape was played back. The answer must be that some of the distortion components generated during recording were out of phase with similar components generated during playback, so that some cancellation took place. I often encounter this same sort of thing when I measure stereo FM tuners and find that stereo THD is actually lower than mono THD in many cases.

I wanted to determine how critical recording levels are for this DAT recorder. To do this, I established a 0-dB reference recording level based on the record-level meters. I then made a recording of a 1-kHz test tone, via the analog inputs, in which the level varied continuously from -90 to +10 dB. Resulting THD + N is plotted in dB below reference level rather than as a percentage (Fig. 5). The designers of this DAT recorder have obviously calibrated the record-level meters so as to allow us a bit of overrecording. I didn't run

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Copying a CD does not make a clone of it, but I can't hear the differences at any volume levels I'd use for pleasurable listening.

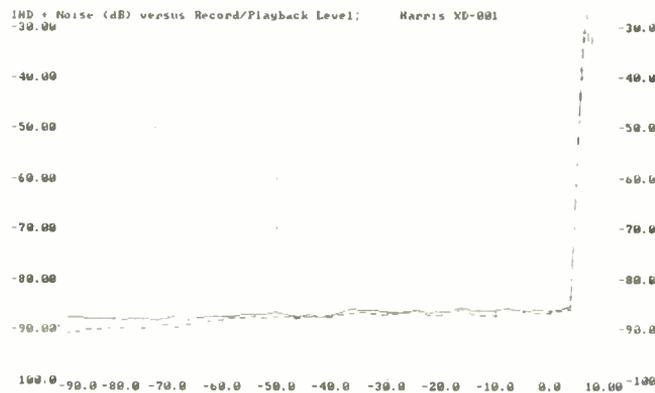


Fig. 5—Distortion vs. recording level, for recording via analog inputs. Solid curve is for the left channel and dashed curve for the right.

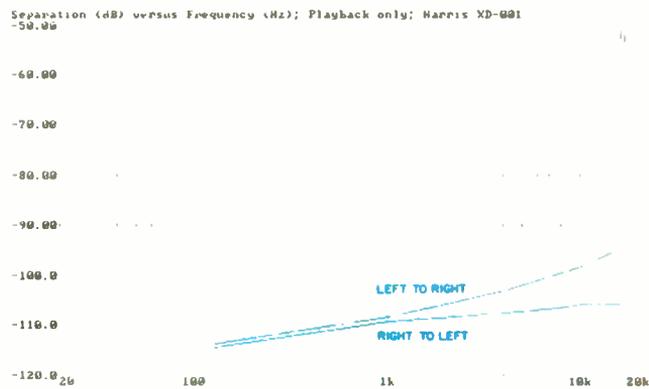


Fig. 6A—Separation vs. frequency for playback of prerecorded test tape.

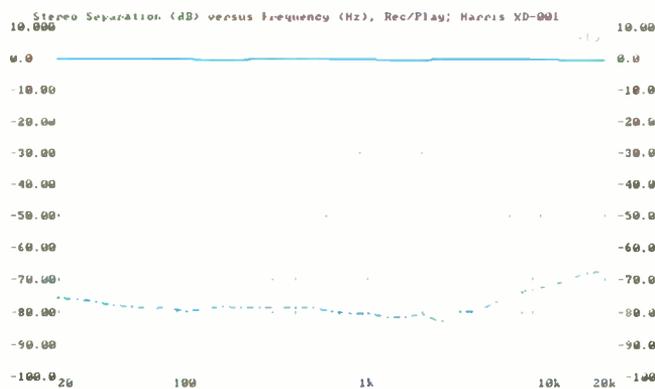


Fig. 6B—Separation (dashed curve) and frequency response (solid curve) for recording made via analog inputs.

into the digital "brick wall" of distortion until the level was actually around 4 dB above the arbitrary zero point shown on the level meters. The results in Fig. 5, however, should serve as a warning for anyone intending to switch from analog to digital recording. With most analog cassette decks, and certainly with open-reel machines, driving the input to a +5 dB or even a +8 dB reading would, at worst, result in barely audible overload distortion during playback. Using such recording levels with a digital tape deck, however, will result in distortion levels that run right off the top of the graph!

Figure 6A shows stereo separation during playback of my prerecorded CD-1 equivalent test tape. The track used for these tests contains frequencies ranging from 125 Hz to 16 kHz. Separation at 1 kHz was between 108 and 109.5 dB, depending on which channel I measured. When I repeated separation measurements for a complete record/play cycle, using a recording of a frequency sweep made on one channel via the recorder's analog inputs, separation at 1 kHz dropped to 80 dB (Fig. 6B). Now, 80 dB of separation is certainly more than even the most astute listener needs for a good stereo presentation, but it is nevertheless interesting to note how much less separation was obtained when going through the complete record/play cycle. To find the source of this crosstalk, I ran a spectrum analysis of a 1-kHz signal recorded and played back on the XD-001UH. The solid curve in Fig. 7 shows the desired peak at 1 kHz as well as some out-of-band components at the sampling frequency (48 kHz) and at its harmonics (96 kHz, etc.). The dashed curve represents output from the opposite channel. Actual separation at 1 kHz was 90 dB, so other crosstalk components must account for the lower 80-dB reading observed in Fig. 6B. Such components might include the peak at 120 Hz as well as those beyond the audible range.

I measured the playback linearity of the XD-001UH, using the CD-1 equivalent tracks available on my digitally recorded test tape. These measurements were only made for the playback function of the recorder. If I were to record the same test signals, using my CD-1 test disc, via the analog inputs and then try to judge linearity, I would be judging the combined linearity of my CD player and the Harris DAT recorder, which would not be a valid test. In any case, Fig. 8 is a plot of playback linearity, using undithered signals from 0 to -90 dB. Linearity was pretty good down to -80 dB, but at -90 dB, it was off by nearly 5 dB on the left channel and 10 dB on the right. The test was repeated, using dithered signals at low levels from -70 to -100 dB; results were about the same, as shown in Fig. 9. Notice that the test equipment was unable to pick up the -100 dB signals altogether.

Figure 10 is the familiar "fade-to-noise" test results, again using the equivalent track of my digitally recorded test tape. The signal was easily distinguished from the residual noise down to around -105 dB, so this would represent the unit's dynamic range, at least for playback, based on the new EIA CD Measurement Standards. I also evaluated dynamic range using the method proposed by the EIAJ. For this method, I was able to make measurements for both play only and the complete record/play cycle. For play only, the EIAJ dynamic range was 96.3 dB for the left channel and

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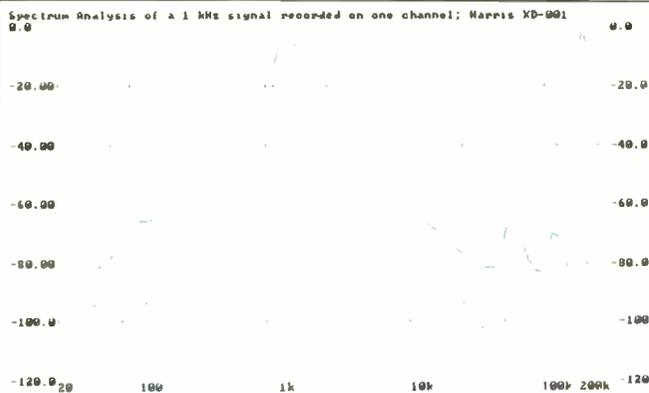
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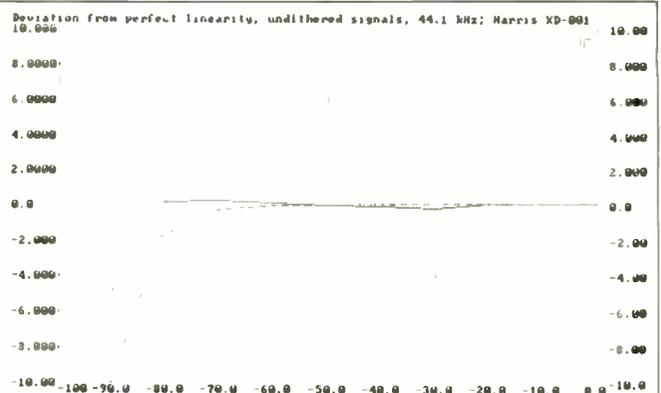
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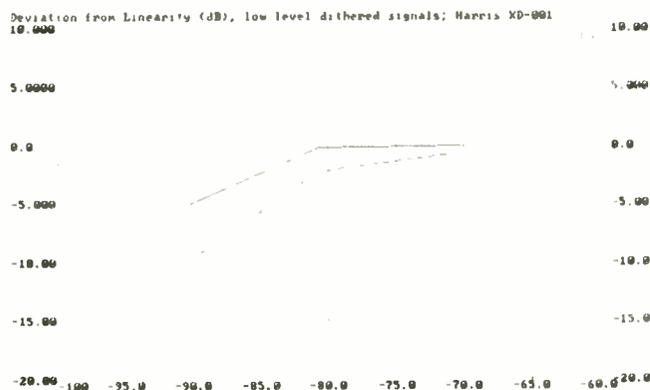
At \$2,400, the Harris was a bargain. Now they have dropped its price to only \$1,550. If I didn't have two DAT decks already. . . .



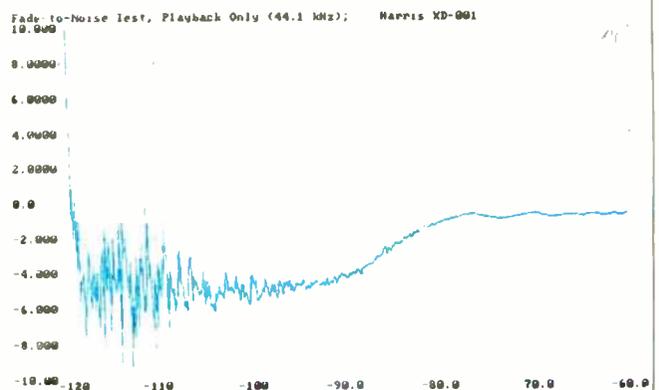
**Fig. 7—Spectral analysis of 1-kHz signal (solid curve) and crosstalk (dashed curve); see text.**



**Fig. 8—Deviation from perfect linearity during playback of prerecorded, undithered signals.**



**Fig. 9—Deviation from perfect linearity during playback of prerecorded, dithered signal. Playback of -100 dB signal could not be picked up by the test equipment; see text.**



**Fig. 10—Fade-to-noise test, for playback of prerecorded test tape.**

94.9 dB for the right. When I measured the complete record/play cycle, dynamic range decreased to 86.8 dB for the left channel and 87.7 dB for the right.

#### Use and Listening Tests

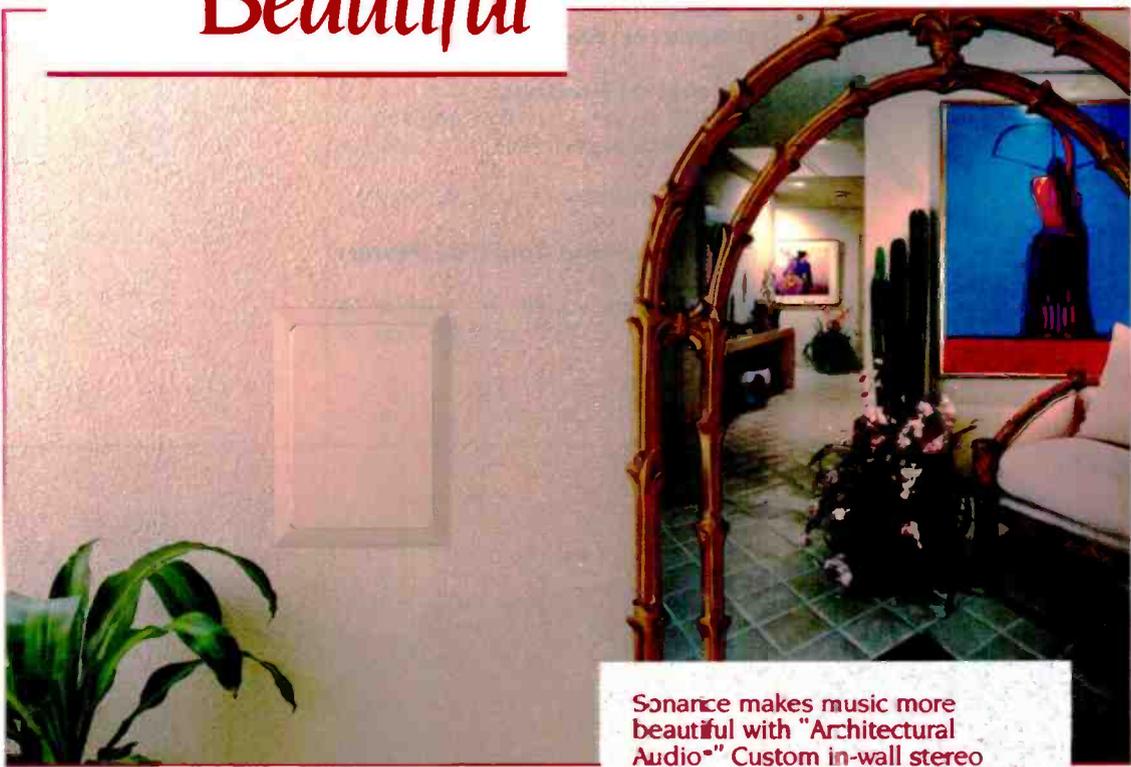
Frankly, I haven't tested enough DAT machines to be able to precisely rank this one in terms of its sound quality relative to other DAT recorders. I recorded several tracks from some of my favorite CDs via the analog inputs of the XD-001UH. I then attempted to make some non-double-blind (not even single-blind) A/B comparisons between the original CD and the recorded version. Certainly, when I turned up the volume on my reference amplifier to louder levels than I would use for pleasurable listening, I could easily detect the higher noise floor of the DAT recording. On the other hand, when I recorded some of my own material using a moderately priced stereo microphone and a less-

than-professional little mike mixer I've had around for some years, the results were astounding—far better than I have ever been able to achieve with my half-track analog open-reel mastering tape deck and certainly better than anything I've ever been able to do with my own reference cassette deck. Both of those recorders, by the way, had each cost me more than this lightweight, compact DAT recorder would.

Speaking of costs, I thought the Harris XD-001UH was a bargain even at the \$2,400 price it bore when it first arrived for review. I paid nearly this much for my own portable DAT recorder when I was in Japan, and it has neither remote-control capabilities nor all of the features of the Harris. But then I learned that Harris has dropped the price of the XD-001UH to an amazingly low \$1,550. If I didn't already own both a home-based DAT recorder and a portable, I would gladly spring for this Harris model.

*Leonard Feldman*

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# 3

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**Frequency Response:** Within ± 1.5 dB of designed spectral balance.

**Sensitivity:** 88 dB SPL at 1 meter for 2.8 V input.

**Impedance:** 5 ohms at 350 Hz, 2.2 ohms at 9 kHz.

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**Dimensions:** 23½ in. H × 10¾ in. W × 17¾ in. D (59.7 cm × 27.3 cm × 45.1 cm).

**Weight:** 39 lbs. (17.7 kg).

**Price:** \$2,100 per pair.

**Company Address:** c/o Audio Products, Inc., 3 Cleveland St., Headland, Ala. 36345.

For literature, circle No. 92



Photograph: David Hamsley

All four of John Fuselier's loudspeaker designs are high-end audiophile systems. High end, however, does not automatically mean high price. Rather, it is a priority which places quality of sound before quantity of sound. The smallest Fuselier, the 2.5, at \$775 per pair, is admitted to have low acoustic output, while its sound quality from midbass up is claimed to be excellent. The \$2,100 per pair Model 3.8D, reviewed here, is poised at the top of the line, where sonic excellence, wide frequency range, and adequate acoustic output can coexist.

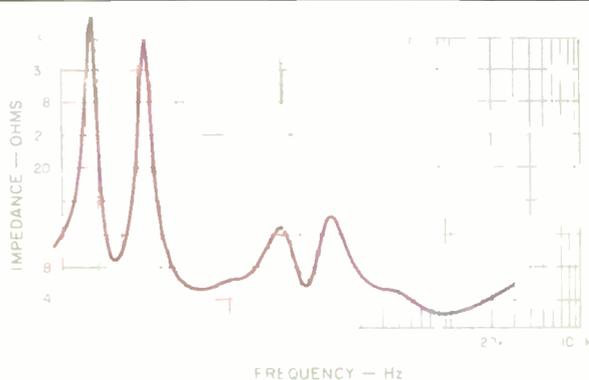
In his quest for quality, John Fuselier's first priority is achieving a very smooth frequency response over a practical range of off-axis listening positions. This requires the best available drivers, precision crossovers, and control of resonance, reflection, and diffraction.

The drivers in the 3.8D are all standard products from the highly respected Danish manufacturer, Dynaudio. The woofer, midrange, and tweeter are Models 21W54, D-52AF, and D-28AF, respectively. Fuselier prefers selected off-the-shelf components because they will be available in the future should repair be necessary. The retail price of these basic components is a hefty \$250, and I don't suggest trying to "roll your own," because there is a lot more here than three speakers in a box.

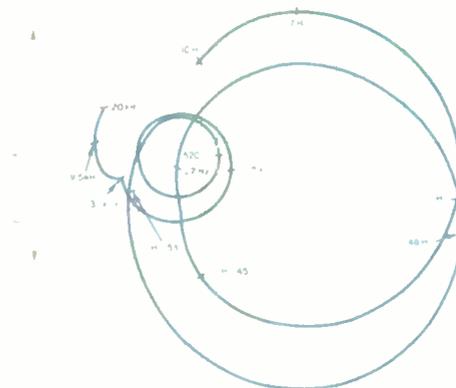
A complex crossover network is used in the three-way Fuselier 3.8D. Next to driver selection, this circuitry is the most important factor in achieving smooth frequency response. There are three main design considerations. The first of these is selecting a circuit configuration and component values which will complement each driver to achieve the best acoustic bandpass responses. This can be considered a form of fixed equalization. Second, the acoustic phase shifts of adjacent high- and low-pass filters should be made to track each other, preventing polar-pattern shifts through the crossover range. Finally, when all filters are combined, the input impedance must present a reasonable load to the power amplifier.

Crossover components in the 3.8D are mounted to a p.c. board inside the cabinet. I counted eight film-type capacitors, two nonpolar electrolytics, and four air-core inductors. I believe there are more components under the board. All connections are soldered, which, in my experience, results in greater reliability than push-on connectors crimped to the wire. The tight-tolerance components help match the two loudspeakers of the pair for best imaging.

A stepped-front cabinet design is used to correct for the different acoustic centers of the drivers. The depth of the woofer cone places the voice-coil and the acoustic center of the woofer well behind its mounting flange. With a conventional flat-baffle mounting, the woofer's acoustic center would be behind that of the midrange dome. This is avoided by a 49-mm step in the front panel, which moves the woofer forward. The midrange flange overlaps that of the tweeter, moving the midrange slightly forward as well. This overlap also serves to position the domes as closely together as possible, keeping them in phase over a greater vertical radiation angle. Fuselier claims smooth response over a  $\pm 10^\circ$  angle, which is quite good. A 45° bevel board is used to smooth out the step between woofer and midrange. I would expect this to cause an interfering reflection in mid-



**Fig. 1—Magnitude of impedance. Note the dips at the vent tuning frequency (27 Hz), the woofer/midrange crossover frequency (700 Hz), and where the tweeter comes in (10 kHz).**

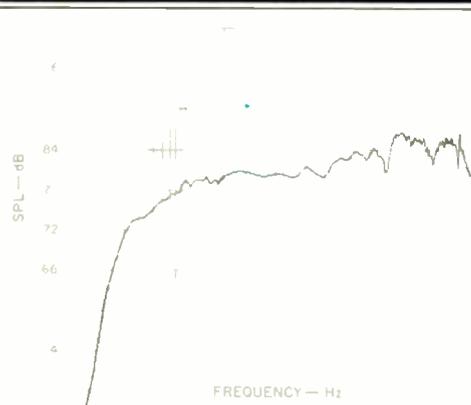


**Fig. 2—Complex impedance, showing reactance and resistance vs. frequency.**

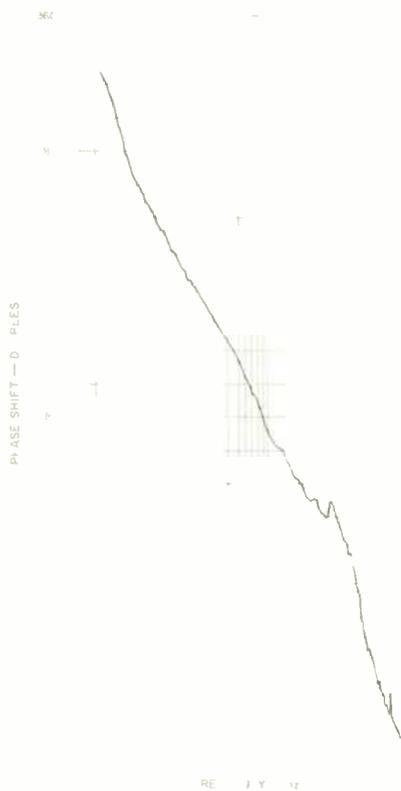
range radiation, but leaving the discontinuity presumably would cause even more problems.

Mechanical and acoustic cabinet resonances are controlled by two angled, internal, cross-bracing baffles. These plates acoustically separate the parallel surfaces of the enclosure, reducing simple resonant modes. One-inch foam

Positioning is not very critical, which means that suboptimal placement does not greatly degrade the 3.8D's sound reproduction.



**Fig. 3—One-meter on-axis anechoic frequency response, with an input of 1.0 watt into 4 ohms (2.0 V).**



**Fig. 4—One-meter on-axis anechoic phase response. The large amount of phase shift shown is not unusual in three-way systems.**

blankets line most of the interior, to absorb the woofer's rear radiation. This absorption also reduces low bass output. Fuselier's priorities show here: Bass quantity is sacrificed for improved resonance control.

Other Fuselier loudspeakers use circuit breakers for protection, but the 3.8D is unprotected. Fuselier is justifiably concerned with the breaker's contact integrity after it has cycled a few times. The 3.8D is no more prone to burnout than any other unprotected speaker, and the manual states that distortion will be heard before the system is damaged.

The cabinet finish of the 3.8D is superb. The wood veneer on top, bottom, and sides is sealed, stained, and hand-rubbed with tung oil, giving a deep, glossy finish. The front and rear are painted black, and an elaborate wood grille frame allows brown stretch fabric to cover the protruding drivers without restricting side radiation. Nevertheless, Fuselier claims the speakers are calibrated with the grilles off, implying that this is how the serious listener will use them.

There are no controls on the 3.8D, just two input terminals flush-mounted on the rear. Either double-banana or specialty connectors can be used to connect heavy speaker cable.

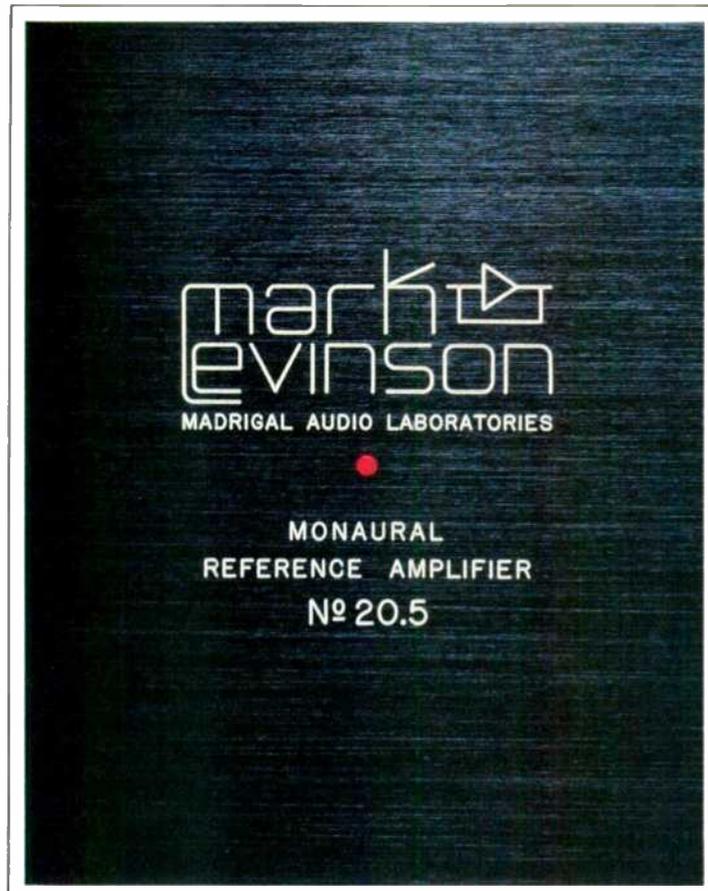
#### Measurements

All measurements were made with the grille removed and, as with the listening tests, were conducted using a solid-state amplifier of low output impedance, as recommended, to achieve the designed spectral balance.

The magnitude of input impedance versus frequency is shown in Fig. 1. At low frequencies, dual peaks straddle the vent tuning frequency of 27 Hz. This vent frequency is one of the more useful pieces of information on this plot, because it is an indicator of the lowest usable frequency of a vented system. At this frequency, the required cone excursion is very low, but it must increase slightly at frequencies above and a great deal below this point. Crossover-related impedance bumps occur around the 700-Hz crossover frequency, and a low of 2.2 ohms is reached at about 10 kHz, where the tweeter comes in.

It is because of this dip to 2.2 ohms that Fuselier recommends a low output-impedance solid-state amp. Tube amps are usually higher in output impedance and could be pulled down 1 dB around 10 kHz, relative to the midrange. You might prefer this reduction, but it is just an expensive way to equalize. Speaker-wire resistance will cause a similar problem; a 15-foot length of 18-gauge zip cord will also drop the highs 1 dB or so. The low impedance will not cause a modern, 4-ohm-rated amplifier to lose output or distort audibly, but the amp will be working hard in this frequency range. Amplifier overheating won't be a problem because high-level 10-kHz signals are infrequent in music. Needless to say, use heavy wire and don't parallel another set of 3.8Ds for music on the patio.

Reactive and resistive components of the input impedance are plotted in Fig. 2, with frequencies and phase angles of interest called out. At frequencies where there is a large reactive component and a small resistive component, the amplifier has to absorb electrical energy from the loudspeaker over part of the cycle. This condition, also indicated by a large phase angle, is more difficult than delivering energy to the speaker over the entire cycle. The 3.8D is a



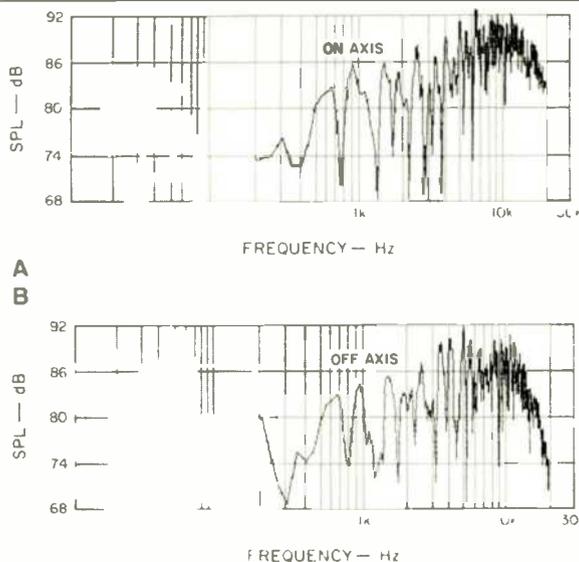
ENGRAVING — January 1989

In the three years since the introduction of the Mark Levinson No. 20 Monaural Reference Amplifier, advances in circuit topologies and components available to the Madrigal design staff have made it possible to produce a new reference. The No. 20.5 Monaural Reference Amplifier is an ultimate statement of our craft and a benchmark for future designs.

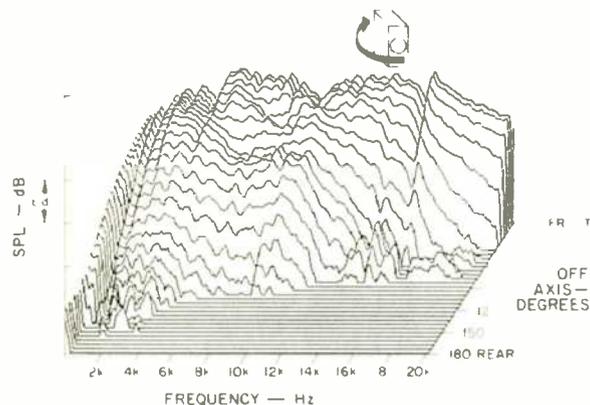


It enables you to achieve emotionally complete musical reproduction in your home. Owners of the No. 20 may incorporate these advancements through an exchange of modules. Mark Levinson products are handcrafted in limited quantities to ensure their high standards. Visit your Mark Levinson dealer to hear how good music can sound in your home.

The spectral uniformity of the 3.8D was outstanding, with low coloration and good overall balance.



**Fig. 5—Three-meter room response, measured on-axis (A) and 30° off-axis (B). Note the smoothness of the off-axis curve.**



**Fig. 6—Horizontal off-axis response plots taken from the front, around the side, and to the rear; see text.**

fairly difficult load, but it will not activate the protection circuitry of common, modern "mid-fi" or better amplifiers.

The 1-meter on-axis frequency response curve of Fig. 3 correlates strongly with what I heard. The 3.8D has a generally smooth response that rises gently with increasing frequency. Bass response rises slightly from its 30-Hz cutoff to 100 Hz. Midrange and high-frequency smoothness is marred only by the slight dips at 4 and around 9 kHz. Experimentation confirmed that the 4-kHz dip is due to a reflection from the angled filler panel; the 9-kHz dip is caused by interference between midrange and tweeter radi-

ation. Both of these micro-sized problems go away when the response is measured slightly above the front-panel axis, where Fuselier might reasonably expect the listener to be.

The phase shift accompanying the amplitude response of Fig. 3 is shown in Fig. 4. This large amount is not unusual in a well-designed three-way system. It is more important that the phase shifts of the individual drivers track each other and, of course, that the stereo pair is matched. The 3.8Ds are very well behaved in these ways.

The test for 3-meter room response measures frequency response as affected by the early reflections found in a typical room. For these measurements, the speakers were placed in positions previously used in the listening evaluation, with the front of the cabinet 3 feet from the wall behind the speaker and 4 feet from the side wall. The speakers were angled 30° inward and mounted 24 inches off the floor, on stands. The on-axis plot (Fig. 5A) represents what a listener near the center of the room would hear. Its average is smooth but even brighter than shown in the anechoic curves. At 30° off-axis (Fig. 5B), the still-smooth average indicates wide directivity and good room interaction. The usual floor-bounce interference of raised speakers notches the range around 300 Hz.

Amplitude response off-axis is measured every 6° over a 180° degree range and is plotted in a "3-D" format. This is shown in Fig. 6 for the horizontal plane, starting in front and going around the side to the rear. None of the midrange narrowing found in most two-way speakers is evident because the woofer is used only up to 700 Hz, where it is still nondirectional. Wide midrange directivity takes over and blends with the tweeter's output.

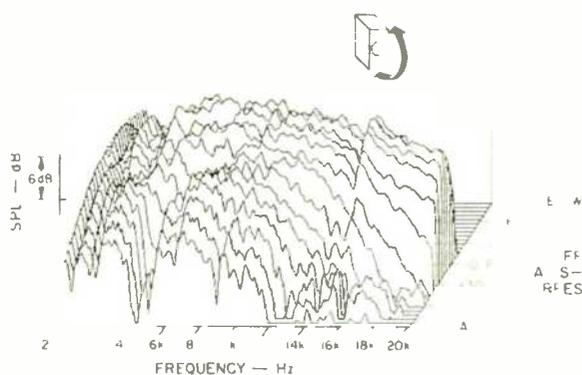
Figure 7 is the vertical off-axis plot—from below, to the front, to directly above the speaker. Since different angles in this plane produce different distances from the drivers to the microphone (or ears), I expect to see angles where the drivers interfere at the crossover frequencies. There are virtually none near either 700 Hz or 6.5 kHz. This excellent performance is due to good choice of frequencies and the high slope of the crossovers.

Figures 8, 9, and 10 indicate nonlinearity by plotting harmonics generated in the loudspeaker when reproducing a pure tone. There are 3-D plots, with the front-to-back axis indicating power input from 0.1 to 125 watts; the second through the fifth harmonics are shown. The 3.8D is excellent at the test frequencies of 41.2, 110, and 440 Hz (the musical notes E<sub>1</sub>, A<sub>2</sub>, and A<sub>4</sub>, respectively). With 440-Hz input (Fig. 10), the fourth harmonic is almost entirely produced by the midrange, which receives some 440 Hz despite the crossover's 700-Hz high-pass filter.

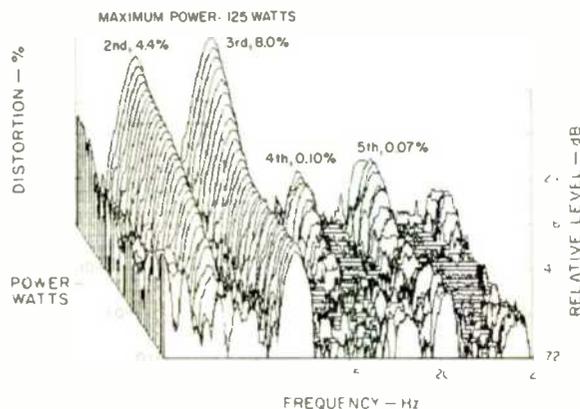
Figure 11 plots the modulation of 440 Hz by 41.2 Hz when both are fed to the speaker in equal amounts. This is essentially another linearity test at 41.2 Hz, but other factors—such as frequency modulation—are introduced. The 3.8D does well, but it has its power limits. Distortion climbs rapidly above 20 watts and is an annoying 10% at 70 watts.

Power linearity is a full-range linearity test. Starting with 1.0 watt, power is increased in steps to 256 watts. Figure 12 shows the power input and the frequency where the acoustic output fails to track the input increase by 1 dB. Amplifier power greater than this amount will be of little benefit.

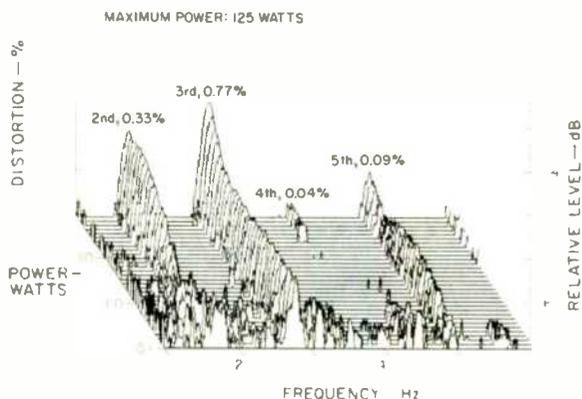
A speaker with this smooth response does not grab you with specific attributes. It may take time to fully appreciate the 3.8D.



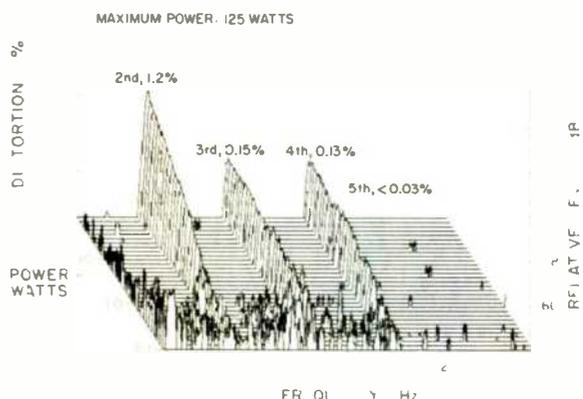
**Fig. 7—Vertical off-axis plots taken from below, up the front, and to the top. Note relative absence of interference effects at the crossover frequencies of 700 Hz and 6.5 kHz.**



**Fig. 8—Harmonic distortion products for the tone E<sub>1</sub> (41.2 Hz).**



**Fig. 9—Harmonic distortion products for the tone A<sub>2</sub> (110 Hz).**



**Fig. 10—Harmonic distortion products for the tone A<sub>4</sub> (440 Hz).**

Although the 256-watt maximum applied is handled over much of the 3.8D's range, the manufacturer's 160-watt recommendation is certainly reasonable.

The energy versus time response is shown in Fig. 13. In this test, energy is at its maximum in the upper part of the test range of 20 Hz to 20 kHz. The plot shows the strong tweeter output and shows that later arrivals, from diffraction and reflection, are more than 24 dB down.

#### Use and Listening Tests

The most exciting part of a loudspeaker review is the listening evaluation, but preceding this are the mundane tasks of unpacking the speakers and reading the manual. I mention this because the 3.8Ds had the most elaborate and protective packing I have seen for a loudspeaker. A beautifully made wooden frame snaps onto the front of the speak-

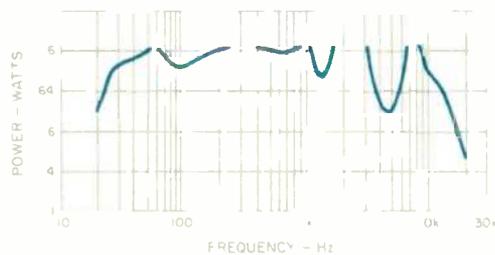
er for protection, followed by plastic wrapping, 1/8-inch sheets of plywood for all six sides, a corrugated box, Styrofoam isolators, and finally, the outer corrugated shipping box. (Grilles are shipped separately.) I was impressed and ready for great sound.

The manual recommends placing the 3.8Ds on short stands away from walls. Fuselier provides simple room-ratio formulas to suggest a starting position. Obviously, the manufacturer expects that the user is an audiophile willing to meet the demands of best sound reproduction. I found positioning to be relatively noncritical, meaning that suboptimal positions did not degrade the sound greatly. Best positioning proved to be 3 feet out from an 18-foot wall and 4 feet away from the side walls. The Fuselier 3.8Ds were placed on stands and rotated inward to minimize the side-wall reflections.

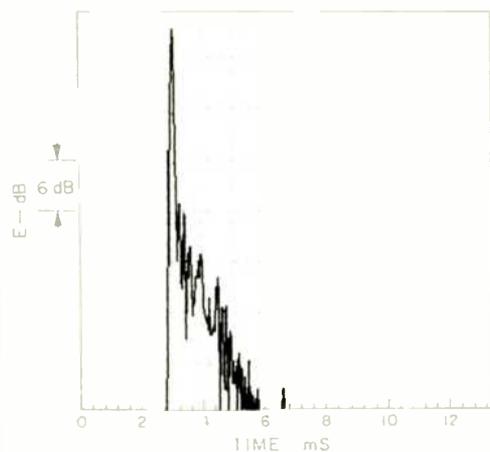
I recommend the Fuselier 3.8D as a refined loudspeaker for the musically mature audio enthusiast.



**Fig. 11—IM distortion on 440 Hz (A<sub>4</sub>) produced by 41.2 Hz (E<sub>1</sub>) when mixed in one-to-one proportion.**



**Fig. 12—Power linearity (input power handling vs. frequency for 1-dB compression of the output).**



**Fig. 13—Energy vs. time.**

I listened to the 3.8Ds using a variety of familiar recordings, mainly jazz and classical. (I avoid pop and synthesizer music when evaluating naturalness and fidelity.) Spectral uniformity of the 3.8Ds was outstanding, with low coloration and good overall balance. Octave-to-octave balance was only slightly upset by excessive high-frequency content and lack of the lower part of the octave from 16 to 32 Hz. Bass power, extension, and freedom from distortion were up to the highest standards for listening to natural music at reasonable levels, the one minor exception being the lowest organ pedal tones. In other words, the bass is better than that of most add-on subwoofers.

The measured high-frequency rise was a surprise to me when I first saw it, because excessive highs had bothered me only slightly in the listening evaluation. My conclusion, therefore, is that the extreme smoothness of the response makes this rise acceptable. Loudspeakers with a rougher response and boosted highs are always irritating to me.

Proper spatial rendition requires that the speakers "disappear" as perceived sources of sound. The listener should be able to visualize a wide, but not too wide, soundstage containing stable instrument images and a sense of correct ambience. The system should correctly render *differences* in perceived depth of images in the soundstage, not just a limited perspective that is always close or always distant. Success in creating these perceptions depends heavily on the recording, the listening room, and speaker/listener placement. I use proven good recordings, an excellent room, and optimal positioning to get the most from the loudspeaker systems.

The 3.8Ds excel again in spatial rendition: They are as good as, and perhaps better than, any system I have had in my listening room. They were particularly impressive playing the Arrigo Boito Prologue to *Mefistofele* (Telarc CD-80109-2). The orchestral, choral, and organ sections of this thickly textured piece were separated and arrayed evenly across, and deeply into, the soundstage. Ambience reproduction was perhaps just short of the best I have heard. Dipole speakers and simple ambience extraction schemes have given me the best results so far.

Loudspeakers with a "presence peak" could have more definition and clarity than the 3.8Ds, but this would obviously be wrong. Also, elevated upper bass could give more "punch." Again, wrong. A loudspeaker with a smooth response, like the 3.8D, does not grab you with one of these focused attributes, and so it may take time to fully appreciate this speaker. If you want punch or presence from these systems, use an equalizer, or better yet, just turn up the volume. The 3.8Ds will play quite loudly with no sign of distortion.

John Fuselier told me that the sample units sent to *Audio* for review do not reflect a slight reduction in high-frequency energy that has been applied in production for some months now. In any case, elevated highs might be just right for more distant listening in an absorptive room. My treble nit-picking—dare I admit that I have a treble control and occasionally use it?—is a very minor issue. I enjoyed my music through these speakers and recommend the Fuselier 3.8D as a refined loudspeaker for the musically mature audio enthusiast.

David L. Clark

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## VMPS SUPER TOWER/R AND TOWER II SPEAKERS

**Company Address:** c/o Itone Audio,  
3412 Eric Ct., El Sobrante, Cal.  
94803.

For literature, circle No. 93

Every loudspeaker system involves some important compromises with musical realism. If there is some way to get superior performance in every area from a single speaker system, no manufacturer has yet found it, and the laws of physics indicate that it is likely no manufacturer ever will. One has to be careful in making such statements, though. I was attending a Summer CES with a professor of physics from the University of Chicago. He listened very patiently to a speaker manufacturer tout his product, then identified himself and explained why the concept couldn't work. Without pausing for a moment, the manufacturer replied, "This speaker is so good, it can defy the laws of physics!"

The laws of physics, however, are gentler than the laws of economics, which normally impose very severe limits on cabinet and driver size in all but the most expensive speaker systems. These, in turn, normally impose yet more severe limits on power-handling capability and deep bass response.

VMPS is a small speaker company which seems determined to prove that, while no speaker designer can break the laws of physics, a really dedicated designer *can* break the laws of economics. Their Super Tower/R and Tower II loudspeakers cost from \$878 to \$2,058 per pair, depending on your choice of the smaller or larger model, your choice of tweeter, and whether you buy a kit or an assembled unit. Even the top of this price range is far lower than what a pair of most good subwoofers costs, and the VMPS Towers prove that a good, high-end speaker can be affordable and still deliver both wide dynamic range and all the deep bass power any audiophile could desire.



Right at the outset, I should note that most speakers under \$2,000 a pair simply don't provide any real deep bass response. They usually start to cut out at frequencies from 80 Hz down to 40 Hz. While this may lead to good frequency response claims in brochures, real bass power is not being delivered to the listening room, and what bass power there is comes at the cost of serious distortion and impedance problems.

Size alone is not the only problem, although larger enclosures and drivers present manufacturers with major cost, transport, and room decor-compatibility difficulties. Most full-range systems

with crossovers are lossy in the deep bass, while too many others exhibit serious phase shift and driver polarity inversion. Small woofers require long excursions to move a lot of air and rarely achieve any savings in mass because about 75% of the system mass consists of the voice-coil and former assembly, rather than cone area.

It is difficult for a designer to match the driver's impedance to the air in a room without the use of some sort of loading, either with a slot or duct or a large folded horn. The only practical alternative to a large enclosure size is equalization, and active equalization has usually led to serious increases in

Photograph: Fred Stimson

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The VMPS Towers prove that speakers can be affordable and still deliver wide dynamic range and all the bass anyone could desire.

distortion and to overdriving the woofer at peak power. For a good readable summary of the engineering issues involved, see *Handbook for Sound Engineers—The New Audio Cyclopaedia*, Glen Ballou, editor (Howard W. Sams & Co., Indianapolis, Ind.).

Most manufacturers, usually for economic reasons, use drivers with limited bandwidth and limited power-handling capability within that bandwidth. Such speakers tend to overload. This is particularly true in the bass. While cost considerations limit most systems to just two or three drivers, it becomes extremely difficult for a single driver to handle both the deep and middle bass, and even more difficult to find a single driver that can handle the entire bass. Crossover design presents equal challenges, with some designs having control problems such that the resulting system is extremely sensitive to amplifier damping.

The solution most high-end speaker manufacturers use is either to deliberately sacrifice low- and mid-bass response for superior upper bass and midrange response. The other common solution is to raise the price of the loudspeaker and reach a reasonable compromise between bass power and extension and what is practical to mass-produce. VMPS, in contrast, has accepted the cost of making relatively small numbers of large enclosures with proprietary 12- and 15-inch woofers and built-in subwoofers.

Even the smaller system in the VMPS Tower line, the Tower II, uses a 12-inch, mass- and slot-loaded passive radiator as a subwoofer; a 12-inch, high-compliance, low-mass woofer; a 12-inch mid-bass coupler; a 5-inch midrange; a dome tweeter, and a top-firing tweeter to improve dispersion. All of this is housed in a cabinet which measures 43 × 15 × 16 inches and weighs 95 pounds. The version of the Tower II under review also had the optional ribbon tweeter and higher performance dome tweeter and costs \$1,328 per pair, assembled. This is not cheap, but the Tower II provides at least three times the cabinet volume of virtually all the speakers in its price range, not to mention the presence of several more drivers.

VMPS specifies that the Tower II has a -3 dB point of 22 Hz, a bandwidth

up to 30 kHz, and harmonic distortion of only 0.7% at 1 watt in a free-field or anechoic environment. The Tower II is relatively efficient and produces 95 dB SPL at 1 meter for 1 watt, but it can take power up to 300 watts. The manufacturer claims it can deliver 126 dB SPL with 5% harmonic distortion, and I found it could deliver well over 110 dB SPL without any audible sign of breakup. (*Audio* does not pay me enough to audition speakers at higher SPLs!) A quasi-second-order filter is used to preserve good phase response, and the drivers are compensated for time delay.

The Super Tower/R is a larger version of the Tower II, offering even more deep bass and power-handling capability. The larger array of midrange and high-frequency drivers expands the apparent image and soundstage. A pair costs \$2,058 assembled, with the ribbon tweeter and high-performance dome tweeter, and uses a 15-inch mass- and slot-loaded passive radiator firing down toward the base of the cabinet. It uses a 15-inch low-bass driver, a 12-inch mid-bass driver, two 5-inch cones, two 1-inch soft dome tweeters, a ribbon supertweeter, and a top-firing tweeter. Its cabinet is 49 × 17 × 21½ inches and weighs 166 pounds.

VMPS specifies that the Super Tower/R has a -3 dB point of 20 Hz and a bandwidth up to 40 kHz, with harmonic distortion of less than 0.5% at 1 watt from 22 Hz to 40 kHz in a free-field or anechoic environment. The speaker is relatively efficient, producing 96 dB SPL at 1 meter for 1 watt, and it can take power up to 350 watts. Once again, a quasi-second-order filter is used to preserve good phase response, and the drivers are compensated for time delay.

In both models, the low-frequency and midrange speakers use polypropylene cones. The cabinets are very heavy and are solidly reinforced and damped. Mirror-imaged, the drivers are placed to produce an apparent point source. Both models provide a full range of treble and midrange adjustments, which, for once, seemed to produce best performance at the nominal flat setting. The bass can be tuned to produce the best response for a given room and system by mass-loading the passive radiator to trim its Q.

Experimentation in this area is absolutely essential. A Tower that has been carelessly set up, without the proper loading, will either lose deep bass power or will sound far too boomy. The overall construction is very good, although there are some obvious hand-built touches. Good-quality components are used throughout the cross-overs.

I have gone into unusual length in describing the VMPS Tower II and Super Tower/R because they are so radically different from most speakers in their price range and are much closer to the large high-end monitors in terms of size and complexity. Quite frankly, the economics of these speakers amazes me; I really don't see how VMPS can deliver so much for the price.

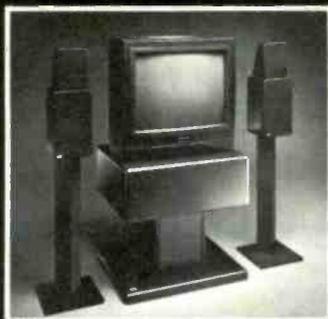
Once again, however, it is the sound that counts, and the VMPS Towers seem to live up to their specifications. I used third-octave pink-noise and warble-tone generators, and despite the fact that no one can make truly accurate real-room measurements of low-end response with such techniques, the bass I did measure was extraordinarily extended and flat. Subjectively, it is possible to get a very good idea of bass quality by listening to bass and baritone voice, complex and full organ music, a grand piano like the Bösendorfer, and bass viol, cello, and percussion. In each case, both VMPS speakers had extraordinarily good resolution of both the deep bass and the mid- and upper bass.

I should hasten to add that good bass does not mean a steady diet of cannons and bass drums. It also does not mean boom or exaggeration. It means being able to hear the full impact of the organ, without any smear of its lower tones, and being able to feel the lowest notes while understanding the mid- and upper bass as music. Virtually all speakers either give up a great deal of detail, emphasizing part of the bass register at the expense of other notes, or fail to deliver the notes you feel more than hear. This tends to make organ music seem dull and lacking in variety and has similar effects with virtually all bass instruments. The Towers—along with a few much more expensive speakers and subwoofers like the Infinity IRS, larger Duntechs,

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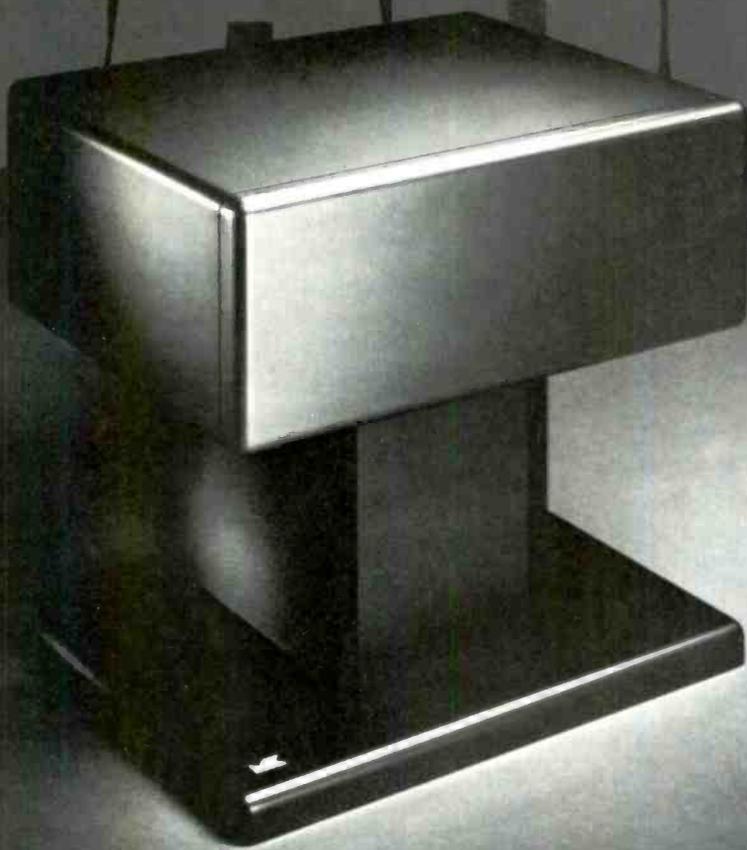
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The Super Towers do have a more open soundstage and a notably smoother midrange, and are slightly more dynamic than the Tower IIs.

and ENTECs—really do give you all the music.

Equally important, the Tower speakers achieve a flat transition of energy from the deep bass into the upper midrange. They demonstrate that the real advantage of deep bass power lies in its ability to communicate all the natu-

ral warmth of ordinary music, not in its ability to reproduce sound spectaculars. If you like solo piano music, string quintets, small modern-jazz groups, and some of the older music for oboe and woodwinds, you will be just as impressed with the Towers' bass as will someone who is into power rock. It

is amazing to hear how important realistic bass extension and power are for enjoying the midrange in very ordinary music, and how much of the impact and warmth of music most small speakers give up.

The Towers offer special advantages in reproducing the power of music such as 19th-century symphonic spectaculars and grand opera. Most speakers condition us into listening to such music at far lower volumes than are heard in a live performance. The Towers have the combination of power-handling capability and low distortion that encourages live listening levels. These are also the levels that expand and open up the soundstage and allow you to hear all the music. Lower levels distinctly alter the apparent tonal balance and dynamics of instruments because of the ear's lower sensitivity to bass and treble (the Fletcher-Munson effect). It was a real pleasure to find affordable speakers that provide this gain without pain.

I do have to say that it was my daughter who really put the Towers through their paces in terms of sheer power and bass energy. She ran through her collection of British rock records at normal volume and then sank into the depths of heavy metal at volumes I regard as being as unpleasant as the music. She even hooked her bass guitar up to my stereo system, and the Towers survived at least as well as the house did. The end result was that her friends who play rock came to hear the Towers and then *their* friends came. The general reaction was that the Towers were the first realistic rock speakers they had ever heard. I, thank the muses, will never know, from my own live concert experience, if they are realistic. I will, however, certify that these VMPS speakers provide very realistic reproduction of big band jazz—which is as close to live heavy metal as I ever intend to get.

As for the upper octaves and the soundstage, both Towers provided very good performance, although several high-end speakers with similar price tags are superior. The soundstage was wide and open, and imaging was good. Depth was also good, although not truly outstanding. The overall coherence of the upper octaves was good, and the treble was sweet



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The Tower II is a "best buy" for lovers of deep bass and sheer power, while the larger Super Tower has no rival at anything near its price.

and extended, balancing the extension and power of the bass. With proper adjustment and attention to the mass damping of the passive radiator, both Towers were very coherent speakers.

Anyone who has heard the Quad ESL-63s, Thiels, and Vandersteen speakers at their best would probably agree that it is possible to provide a still more open and coherent soundstage, slight improvements in the realism of timbre, and more sweetness and apparent air. There is a trade-off between the bass and power of the VMPS and the upper-octave and soundstage performance of some other top high-end speakers.

As for the differences between the Tower II and the Super Tower/R, I lacked the courage to explore their relative dynamic limits. The larger Super Tower/Rs do produce a more open soundstage and a notably smoother midrange and upper midrange. They also sound slightly more dynamic, even at humane listening levels, and there is more "feel" and emotional impact from the deep bass. The two are, however, very similar in overall sound character and performance.

To sum up, the VMPS Tower II is worth a trip to a dealer simply to rediscover bass and to hear what you will be missing in most other speakers in its price range. It is the only speaker even close to its cost that is capable of true deep and powerful bass response down to 25 Hz. Overall, these systems may not produce quite the air, detail, and smoothness of the very best competition in the same price range, but such compromises are limited. I feel that the Tower II is an unquestionable "best buy" for lovers of deep bass and sheer power. It will be of particular interest to fans of organ, rock, big band, and full orchestral music, as well as grand opera.

The Super Tower/R is a bigger, smoother, and better integrated version of the Tower II, with a larger array of drivers, and it offers a more open soundstage and more depth. While it lacks the openness and air of some competitors in its price range, the overall integration is excellent. I know of no rival, in terms of the ability to offer deep bass and sheer musical power, at anything like the price.

Anthony H. Cordesman

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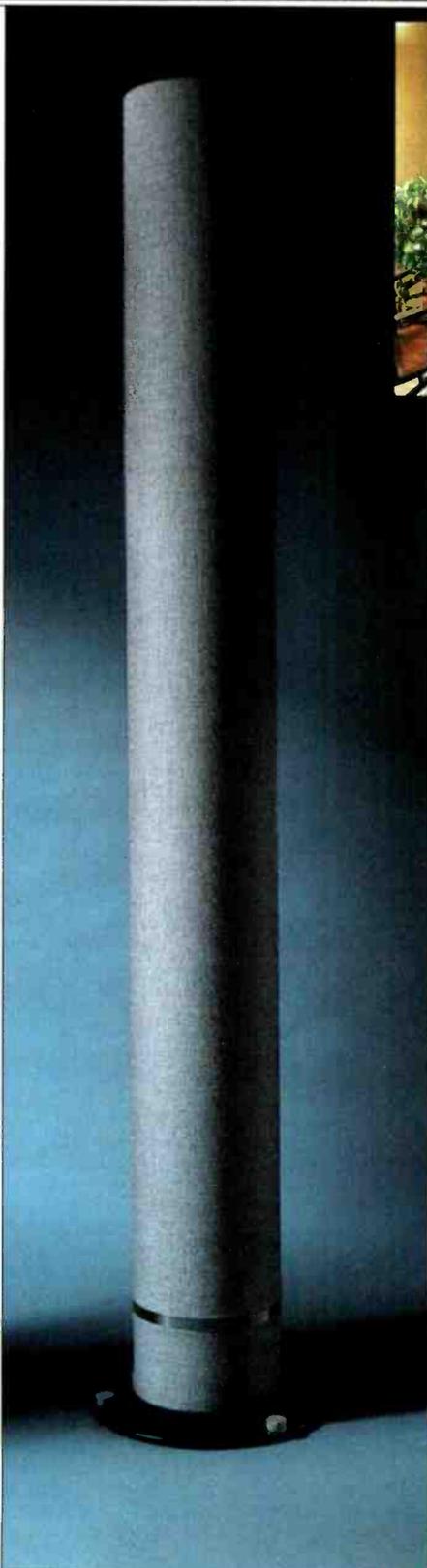
## PHANTOM ACOUSTICS SHADOW ACTIVE L.F. ACOUSTIC CONTROLLER

**Company Address:** 12919 Earhart Ave., Auburn, Cal. 95603.  
For literature, circle No. 94

The Shadow is one of the most unusual and interesting products in the world of audio today. Nothing on the market does what this unique system purports to do, which is to actively control low-frequency room resonances. The Shadow, says the manufacturer (Phantom Acoustics, a division of Threshold Corp.), performs "much as though the room boundaries had been physically removed. . . . Use of a Shadow will 'clean up' room effects that would otherwise mar bass reproduction and will increase the perceived clarity in a music system's low-frequency performance."

Therefore, let us take a close look at the construction and theory of operation to give a clear idea of what makes this device tick. Externally, the Shadow appears to be a cloth-covered linoleum tube, 9½ inches in diameter, on a black, round, 15-inch supporting base. The Shadow is 83½ inches tall, and its center of gravity is about 40 inches from the floor. This makes it relatively unstable if it is not vertically aligned. (However, it comes with carefully written instructions on safety and on how to adjust the mounting-base feet for perfect vertical alignment.) Inside each unit are two amplifiers, two condenser microphones and two loudspeakers, with a microphone and speaker mounted at each end of the tube. A power supply is connected to each tower via a detachable cable. The Shadow is available only in pairs, for \$1,790.

Since each column weighs only about 45 pounds, the Shadows are not very difficult to move around. They do, however, have to be tilted or turned horizontally to get through doorways of normal height, should it be necessary to move them from room to room. As



will be discussed later, some experimentation is necessary to find the optimum location for the Shadows in each acoustical environment.

These acoustical controllers stand alone, independent of the playback system in the room; there is no connection between the Shadow and the reproducing system. Rather, the condenser microphone senses the pressure field and feeds a signal to the inverting power amplifier, which drives the loudspeaker to produce a pressure wave in opposite polarity to the room pressure. Therein lies the Shadow's fundamental principle of operation—pressure cancellation. The effective frequency range over which the Shadows operate is specified as 30 to 200 Hz. This is the range where standing waves will establish themselves in a typical room.

Digressing for a moment to recall the physics of wave propagation will help us understand why it is necessary to control the pressure waves. The velocity of sound is about 1,130 feet per second, which means that sound wavelengths from 20 Hz to 20 kHz range from about 56 feet to under an inch! For wavelengths much smaller than the dimensions of the room, reflections can be controlled by the type of material on the surfaces. But for wavelengths that are larger than the room dimensions, the only passive control of the pressure buildup is by changing the dimensions of the space and the mechanical rigidity of the wall structure. Indeed, sophisticated acoustic laboratories and some recording studios have motorized walls that can be moved back and forth to change their low-frequency characteristics and reverberation times. Now

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The Shadow can help with narrow-band problems, such as standing waves set up by room boundaries, that no equalizer can touch.

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Electronic equalizers can be utilized where loudspeakers have a response deficiency over a bandwidth of a quarter octave or more; they can be used to control high-frequency response if the room is too bright or dull as a result of

the surface materials employed, and they are also useful in compensating where frequency response changes are known to be needed (for example, when a microphone in a recording session has a certain frequency characteristic that needs correction). However, equalizers are of no help in com-

batting very narrow-band aberrations, such as standing waves established by room boundaries.

Harry F. Olson, in his legendary text on acoustical engineering, describes the theory of this concept, diagramming how such a system could be designed and implemented. Nelson Pass of Phantom Acoustics is the inventor and designer of the Shadow. He followed the technical outline given by Olson and has applied for patents on the specific implementation of the Shadow. This is the first product of this type on the market for use with home high-fidelity playback systems. However, similar devices have been employed for low-frequency noise control and to enhance the acoustics of large concert halls.

I thought of several names that might imply the nature of what the Shadows are supposed to do: Pressure gobbler, room-resonance killer, anti-resonance generator, reverse acoustic-field generator, wall destroyer, room magnifier, and so on. In any event, if the Shadows were perfect in accomplishing their task, they would be able to do away with the standing waves created by the presence of room boundaries and produce a totally open space for the loudspeakers to propagate into. In essence, then, the ideal device could simulate the condition which results when listening in open space—at least up to about 200 Hz.

Okay! Have you got the picture of what this is all about? Sounds pretty exciting so far, doesn't it? Well, as one might rightfully imagine, particularly in the difficult area of acoustics, the real-world execution is sometimes far from the theoretically postulated. In order to verify the basic working principles, I conducted a couple of simple tests. By feeling around the units, I located the condenser microphones. The one for the top speaker driver is mounted right at the center of the upward-firing driver—where the tweeter would be if the speaker were coaxial. A gentle finger tap on this microphone produced a low-frequency "thump" from the speaker that was not evident when the Shadow was switched off.

Secondly, I wanted to get an idea of how much acoustic energy the Shadow could put out. With a top-grade audio system, one must be deeply

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A-6

With proper placement, the Shadows even opened up my smallest room enough to make it sound like a large concert hall.

concerned about how much power the Shadow can handle before distortion sets in. To check for relative power handling, a Shadow was turned on its side and the top microphone/driver located within 4 inches of the 15-inch woofer in a Duntech loudspeaker system. Using tones of 40 to 80 Hz, I could

not drive the Shadows to audible distortion until about 100 watts of continuous power was applied to the speaker. With music signals, no distortion was audible at maximum power levels.

I wanted to get an idea of the bandwidth of the active transducer. Since the driver is clearly working in the low-

frequency, direct-radiating region of the piston, it can be safely assumed that the pressure response is quite uniform. Furthermore, the designer, Nelson Pass, may have found in his extensive development and listening tests that a particular response was most suited to produce the desired results. So, I merely wanted to get an idea of the bandwidth of the active system. To do this, I set the Shadow on its side, facing it directly into a loudspeaker, and then switched it on and off and observed the reduction in output from the source speakers as the frequency was swept from 5 Hz upward. (Remember, the output of the active element is in opposite polarity to the applied signal.) Doing this a few times and averaging my subjective reactions, I gathered that the bandwidth of the overall suppression region was from about 25 to 200 Hz. The actual measurement of a system such as this could be very difficult and costly—beyond the scope of this report and the budget of this reviewer.

Another interesting experiment I conducted was to place a free-air low-frequency driver (no enclosure) near the Shadow to see if it could simulate an enclosure. As you recall, the purpose of a loudspeaker enclosure, in the most basic sense, is to keep the back wave from scooting around the driver and cancelling the pressure from the front of the driver. If the Shadow can gobble up the pressure from one side of the driver, then the opposite side would radiate as if it were in some type of box. This experiment was less conclusive, probably because of the poor coupling, but there was audible evidence that at least some of the back wave was being eaten up. This phenomenon might be an idea for a future inventor or loudspeaker tinkerer.

For sonic evaluation, a pair of Shadows was evaluated in three rooms: A very small one, about 6 × 7 feet, with most surfaces in glass and tile (okay, it was the bathroom); a medium-sized space, about 10 × 10 feet, with a large window in one wall, and a still larger room of 14 × 20 feet.

In each case, it was found that selecting the best location for the Shadows could produce the effect of moving the walls back or opening up the room. The effect was much more



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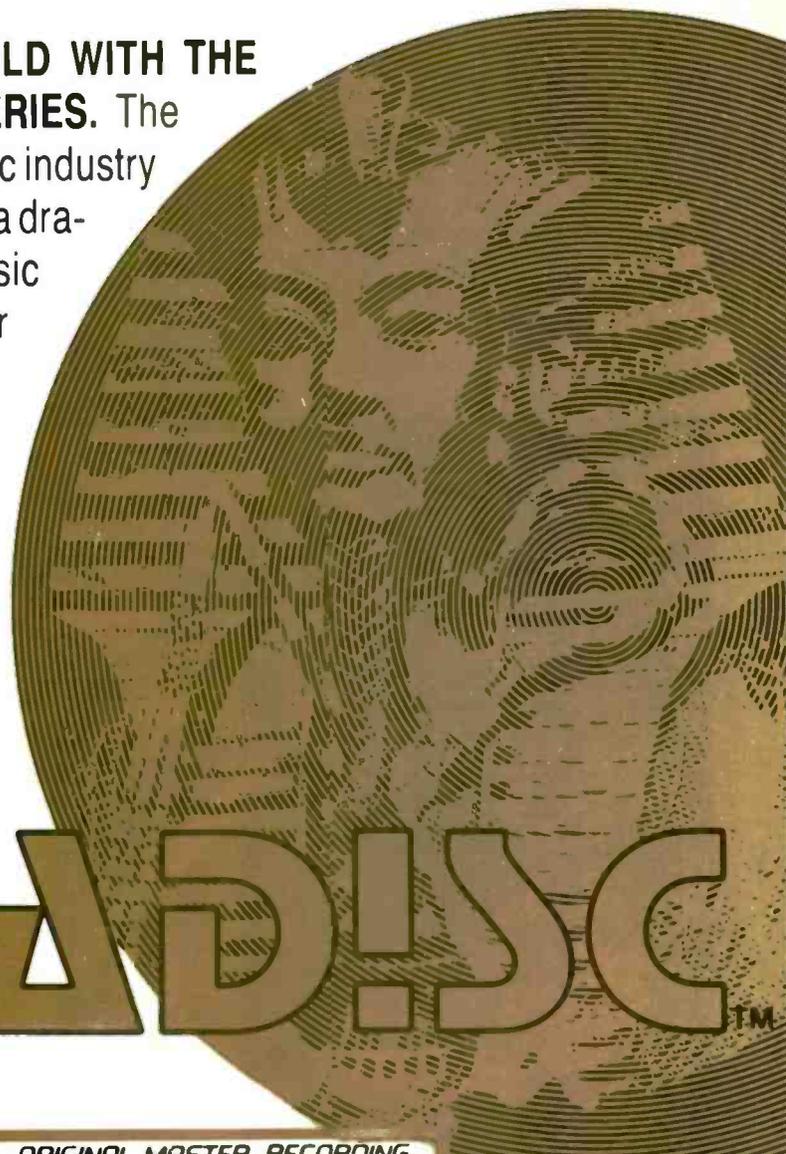
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Some listeners could hear no effect, but others got it right away. Said one: "Wow! It sounds like you kicked the walls down!"

quickly noticed in the smallest of the three rooms, where it was possible to find locations that produced a very authentic sound impression of a large concert hall. By moving the Shadows to a different place within the room, it was then possible to give the acoustic space an "out of doors" quality. Very

interesting, indeed! In the largest of the three rooms, the overall change in the sound was subtle but nonetheless everpresent. In each situation, switching on the Shadow made the room sound bigger or, if you prefer to think of it another way, made the sound more open. As one would expect, the

location of the units in the room have a great deal to do with the audible effect.

As it should be, the effect is sensitive to program content. It was more audible when an ample portion of the signal was in the region between about 50 and 200 Hz. The effect would be more noticeable in rooms with very rigid walls. In a typical home, construction materials being what they are, the very lowest frequencies (below, say, 50 Hz) are not strongly reflected but are absorbed by flexing of the walls, floors, and ceiling. (By the way, a 200-Hz tone has a wavelength of about 6 feet. Thus, it is likely that nasty standing waves will exist throughout a typical room at about this frequency.)

By inviting a few visitors into the test room and asking their opinions about the differences heard with the Shadows off and on, it was quickly learned that some could hear no differences at all while others picked it up right away. The least experienced audiophiles were the quickest to pick up on it. One reaction was, "Wow! It sounds like you kicked the walls down!"

The Shadow is a product that will push the advanced playback system along the asymptotic line to perfection. It is an incremental improvement in playback spatiality that is well worth the price for those who are in search of excellence or just want to have a lot of fun with a great and theoretically valid idea. Those who live in small apartments or have their playback systems in very small rooms would benefit most dramatically. For those whose playback rooms, of any size, have odd configurations that cause acoustic anomalies, it may be worth trying the Shadows before making architectural modifications. Since the dealers for this product are very high-end, customer-oriented businesses, it may be possible—and is certainly advisable—to request a trial in your listening room before deciding whether the Shadow is the best solution to improve your system.

Finally, what a conversation piece! I had more fun talking to visitors about these units than about any other equipment in a long time. You need not worry that visitors won't ask about the Shadows; though elegant and gracefully designed, these acoustic controllers will be noticed by anyone entering the room.

*Almon H. Clegg*



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## NEW RECORDING ARTISTS

## The New York Voices Go On Record As Ambassadors Of Vocal Jazz

Given the Big Apple's status as America's musical fast track, the five young vocalists who compose the New York Voices seem to have picked an appropriate name. For the most part still in their twenties, and a performing entity for less than two years, their live performances have snapped audiences to attention. And now they've been recorded by GRP Records, a successful label closely in tune with today's adult taste.

The GRP CD that carries their name is a fine showcase for these multi-talented performers, whose roots reach from jazz and classical music to the theatre. It combines such jazz standards as Duke Ellington's *Cavanaugh* and the Thelonius Monk tune, *'Round Midnight*

with numbers that will appeal to popular music fans. While they generally use instrumental backing, their album contains blocks of *a cappella* singing as well.

Four of the five New York Voices studied at Ithaca College, though not necessarily at the same time. They were first brought together as part of a six-person alumni group, formed specifically to sing at European jazz festivals during the summer of 1986.

About a year later, two of that ensemble's members, tenor Darmon Meader and baritone Peter Eldridge, began talking about getting their own group together. "The obvious choice was to continue where we left off," comments Meader, who now leads the New York Voices.

Well, almost where they left off. While the alumni group had been a

sextet, Meader, Eldridge and fellow Ithacans Kim Nazarian and Caprice Fox, both sopranos, numbered four. After deciding to fill out the ensemble with a fifth member and spreading word that they were holding auditions, Sara Krieger was signed on. Meader, who does much of the group's writing and arranging, explains that Krieger's alto voice results

short a time. Another may be, as Peter Eldridge puts it, that "people love vocal music, they love singing."

"Particularly within the perspective of the jazz idiom," interjects Meader, completing the thought. "I was an instrumental jazz musician before I got into vocals, and the response to this project has been much quicker."

Purists might argue that what the

New York Voices do falls outside the jazz framework in that it is more blueprinted than improvisational. Meader admits that "the music is on the page for the most part," but is quick to add that the arrangements leave "a lot of space for improvising." He likens the ensemble to a small version of one of the jazz world's big bands rather than to a



The New York Voices are (l. to r.) Sara Krieger, Peter Eldridge, Kim Nazarian, Darmon Meader and Caprice Fox

in "a little fuller sound. A fifth note adds yet another color," he remarks.

Just a few months after their formation, the New York Voices made a New York debut, not at an obscure club but at the city's prestigious Town Hall. An annual Manhattan concert is an Ithaca College tradition, notes Meader. As luck would have it, the February, '88 event's focus was on jazz, and the fledgling group was asked to participate.

Music making of this sort has few and obvious precedents. Lambert, Hendricks and Ross and, later, Manhattan Transfer are probably the two most notable groups who broke ground for the New York Voices. The fact that they're working within a narrowly-populated niche could well be one reason these young performers have attracted so much notice in so

classic instrumental combo.

A more important issue may be the group's relation to those vocal assemblies that polish anything resembling a sharp edge off their music and lack both the energy and honesty for which jazz is known. While conceding that the very nature of blending voices can result in an "incredibly lush" sound, Meader contends that the New York Voices transcend such sweetness with what he terms "a more aggressive approach" to their arrangements. And even as they cross over from their jazz origins into music of a more commercial nature, they're hell bent on preserving artistic integrity.

"We want to sell records," Sara Krieger asserts, "but we certainly don't intend to lose sight of why we're doing this in the first place."

## PAYING OFF THE PIPER

**Spike:** Elvis Costello  
**Warner Bros. 25848-1, LP**

Sound: B Performance: A

There's a whole crowd who can draw from Elvis Costello's 12-year survey of romance like it's a dictionary of quotes; he's put out reams of acrimonious sentiment, enough to animate the poison-pen letters of *any* love life. But bitter lovers will have to turn elsewhere for acerbic puns, since, with *Spike*, Costello has largely left their ranks to investigate, with more sensitivity and skill than ever before, different territory. Perhaps it's knowing that he may very well be discomfiting some segment of his audience that Costello offers, on the album cover, his own fatuously grinning head mounted on a plaque that bears the inscription "The Beloved Entertainer," as if to beat to the punch those who will consign him to obsolescence.

We no longer have an angry young man eloquently ranting in front of a bare-bones backup band, pumping out top-of-the-form pop tunes easy to bang out on your roommate's guitar. On *Spike*, glockenspiel, Uilleann pipes, tympani, Irish harp, and snazzy horn arrangements create complex, evocative backdrops for Costello's observations about capital punishment, imperialism, and the dark side of organized religion.

Of course, Costello has issued social commentary before, but what he delivers here is consistently concerned with this dark underbelly, and he addresses it with unblinking candor. It's all drawn from a fresh palette of stark settings—an airport departure lounge, a middle-class den bathed in TV light, death row—peopled by a set of characters whose actions reveal more about themselves than they ever proclaim. There's a hapless fellow hanged for inciting a murder, a lecherous and drunken priest who frets about the afterlife, a crafty politician capitalizing on sentimental photo opportunities, easily programmable soldiers, and a voodoo mistress in the guise of a schoolmarm. They all drift around in various states of

delusion, rushing away from truth to whatever tune Costello sets down.

From an eerie waltz to frenetic jazz stomps, Costello directs several dozen musicians on *Spike*, including Paul McCartney on bass, Chrissie Hynde on vocals, and co-producer T Bone Burnett on guitars. McCartney and Costello add each other to short lists of col-

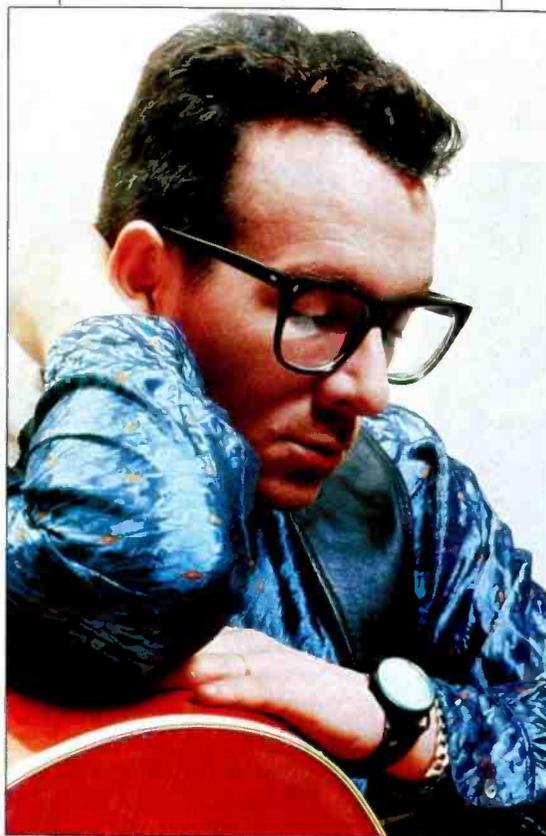
a posthumous early-'70s bootleg called *Goodbye, Jimi.*)

Legal issues aside, you'll be a lot happier listening to the new version, which has the advantage of using original tapes and the latest digital technology. Not that the masters were in great shape, according to Joe Gastwirt, who did the mastering and points out that

they were recorded two-track, directly off the broadcast mixing board—some during live broadcast and some in separate sessions. It's not clear if all the songs here were actually broadcast, but patter with the audience on tunes like "Hear My Train a Comin'" suggests possibly not. The master tapes were cleaned up with as light a treatment as possible (to preserve the music) using Sonic Solutions' NoNoise de-noising system. Gastwirt also credits the quality of the final product to having used a brand-new Neve DTC console. This allowed EQ, expansion, and fading to be done *digitally*, without requiring interim analog steps which would have added noise. Also, Gastwirt was careful to set tape machines to the European standard CCIR curve as opposed to the American NAB curve, which would have added brightness to the already bright material.

The sonic results are excellent, given the less than ideal sources. Some minimal hiss is audible at high volumes, but this is not disturbing. The music is still noticeably compressed and favors higher frequencies—the inevitable effect of the recording circumstances. Occasionally, there are some startling shifts in audio reference perspective, as if the mikes or mix were dramatically changed between cuts.

The performances here are priceless glimpses of early Experience, just before the assault on the U.S., and they're full of Jimi's characteristic raw energy and bravado. Most notable are "Day Tripper" (with (come on, let's say it because your ears will confirm it) a guest vocal by John Lennon, a sacrilegious rendition of "Hound Dog," Mud- dy Waters' "Catfish Blues," a rare instrumental "Drivin' South," and such



laborators on two songs, "Veronica" and "Pads, Paws and Claws," which clearly show the sappy pop influence of the former overshadowed by the sobering cast of the latter. *Susan Borey*

**Radio One:** Jimi Hendrix  
**Rykodisc RCD 20078, CD; AAD;**  
 59:37

Sound: A Performance: A

Beatification of Jimi Hendrix continues nearly 20 years after his death, as these rare early Experience sessions, recorded for the BBC's *Radio One*, see the light for the first time since their original broadcast in 1967. (Well, technically for the second time, since about eight of these songs were released on

certifiable classics as "Purple Haze," "Hey Joe," "Foxy Lady," and the sumptuous "Burning of the Midnight Lamp." Also check out "Hoochie Koochie Man," which was broadcast on the BBC World Service's *Alex Korner's Rhythm & Blues Show* and features that seminal British blues interpreter backing Jimi on slide guitar.

There's an entire organization—Are You Experienced? Ltd.—supervised by Alan Douglas and devoted to bringing us more high-quality Hendrix like this icon. Listen to *Radio One* and you'll hear further evidence of why Jimi Hendrix could inspire such devotion.

Michael Wright

**Drums of Passion—The Invocation:**

Babatunde Olatunji

Rykodisc RCD 10102, CD; ADD; 39:25.

Sound: B

Performance: B

It takes a little time and patience to appreciate the dense framework of percussion that is both the backbone and heartbeat of this energetic music, and to correctly place things in perspective. With at least a dozen drummers engaged most of the time and no melody instruments, except for voices, *Drums of Passion* can be overwhelming at first. We're used to mentally placing percussion in the background,

hearing it as accompaniment to whatever is up front. But here, percussion serves as both lead and rhythm; any instrument can subtly shift roles alone or in concert with others many times within a song.

Olatunji's 21-member ensemble includes Airto Moreira and The Grateful Dead's Mickey Hart, who produced the disc. Hart thought a "live" sound was necessary to authentically represent the band. He accomplished this by recording them together in a single room, capturing individual instruments with condenser microphones and blending the signals with those obtained from an overview concert miking setup that caught the collective sound of the percussion and their intermodulations.

*Drums of Passion* is a cycle of songs addressed to the *Orisas*, some of the most colorful figures in the spiritual cosmology of Nigeria's Yoruba people. Once humans who, by living memorable lives, have been relegated to something like sainthood, the *Orisas* are thought to serve as mediators between a supreme being and the people who worship the *Orisas* by chanting, dancing, and singing songs of commemorative praise. Of the innumerable *Orisas*, those attended to here are: Kori, a fertility goddess invoked through sacrifice and ritual to bring off-



Babatunde Olatunji

spring to childless couples "to dance with"; Sango, a tyrannical yet generous fellow who has the ability to make thunder, and Ogun, the spirit believed to control all wars. Preceding the tributes is an introductory invocation to Ajaja, who unifies those who call upon the *Orisas* in hopes of reaching higher spiritual levels.

With hypnotic call-and-response chanting interwoven with drumming that keeps a furious pace throughout, Olatunji and company passionately whip through six songs that demonstrate how it's possible to merge art and worship. Even after repeated listening and reflection, it seems that we can only scratch the surface of meaning in this rich, complex cultural phenomenon.

Susan Borey

**Stay Awake—Various Interpretations of Music from Vintage Disney Films:**

Various Artists

A&M Records SP 3918, CD; AAD; 66:14.

Sound: B+

Performance: B

*Stay Awake* is the fourth album Hal Willner has produced as an artist tribute. Following, as it does, his testimonials to Nino Rota, Thelonious Monk, and Kurt Weill, this panegyric to Walt Disney and his movie music is quite a change of pace. But there is good reason behind this project. These songs



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The new Barbra Streisand CD shows off this singer's voice—an instrument she plays with mind-boggling control—to perfection.

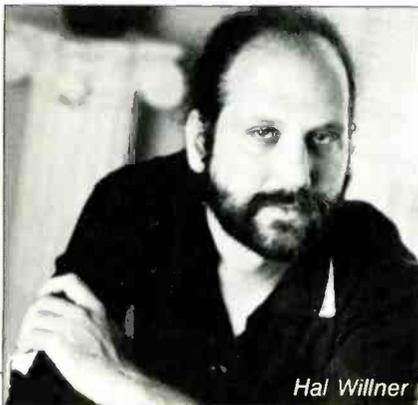
are genuinely universal. All of us have either seen, or been touched by the music, of Disney's films. Thus, there is more than mere nostalgia behind this album: There is the adventure of encountering old friends in bizarre new clothes.

This is not an album for children. In fact, the young ones will be put off by these arrangements, which aren't the ones they know. Willner elicits magic from these tunes by using unusual artist/song pairings. They are often daring and sublime, sometimes startling, and sometimes downright brilliant. But one thing rapidly becomes apparent: Despite what we might *think* we remember, these songs are not all visions of sweetness and light. Some of these new versions are very dark—none more so than Tom Waits' black-lung tale of "Heigh Ho" from *Snow White*.

For startling, try Sinead O'Connor murmuring "Someday My Prince Will Come," Betty Carter doing "I'm Wishing" from *Snow White*, or the finale of "When You Wish Upon a Star" sung, perhaps inevitably, by Ringo Starr with Herb Alpert adding a trumpet solo.

Nothing here is more sublime than Aaron Neville's version of the Mickey Mouse Club theme, while the Ken Nordine narration bits and Buster Poindexter doing "Castle in Spain" from *Babes in Toyland* are pretty strange. But nothing is weirder or more brilliant than Sun Ra & His Arkestra doing "Pink Elephants on Parade" from *Dumbo*.

And there's a whole lot more! This album is beautifully recorded to let the arrangements and the subtleties built into the backgrounds—which are as much fun to listen to as the foregrounds—be easily heard. The wild variety of musical styles makes room for all sorts of sounds.



Hal Willner



One thing I cannot understand is why no indexing marks were included to make it easier to cue up individual songs which appear in the middle of the medleys that make up the album. It is simple to do, and it should have been done.

*Stay Awake* is a unique and lovely album of old favorites. And these new arrangements only serve to highlight the fact that the Disney movie songs included here really have stood the test of time.

Michael Tearson

**Till I Loved You: Barbra Streisand  
Columbia CK 40880, CD; DDD; 47:02.**

Barbra Streisand has one of the most glorious voices on record. It is an instrument she plays with mind-boggling control and finesse, alternately soaring with it into the outer reaches of the stratosphere and taking it down into whisper-soft shadows. Her newest album, *Till I Loved You*, shows off that voice to perfection and exhibits her characteristic masterful craftsmanship in its every detail, from production to the limpid, lovely sound quality of this digitally recorded Compact Disc.

Barbra's duet with ex-paramour Don Johnson on the title number has become somewhat controversial. She is reported to have demanded the cut be excised from the album after they broke up, but it had already become a hit single. Nevertheless, the contrast of their talents here serves to highlight Barbra's significant abilities. Johnson, an adequate singer, sails along in a straight line while Barbra swoops and dives around his vocal in dizzying, dazzling arabesques. Eagles should fly with eagles, I say.

The flaw of this album is in its relentless focus on that glorious voice and what it can do. You hear Barbra and not the songs, and after the full 11-cut distance, everything sounds the same.

Paulette Weiss



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The new Scruffy the Cat release is like a crazy quilt of all the upbeat stuff ever heard enroute from Mersey to Memphis.



**The First of a Million Kisses:** Fairground Attraction

RCA 8596-2-R, CD; 48:01.

Sound: C+ Performance: C

Fairground Attraction has a light, almost fey touch to their music. The 14 songs on this CD, including two bonus

tracks, come from a place very near Tin Pan Alley. These Britishers display an old-fashioned sentimentality again and again in their songs. They even sound American.

Their low-keyed approach features Eddi Reader's appealing voice and mostly acoustic instrumentation. They

appear so casual that they hardly seem to be trying very hard, yet Fairground Attraction emerges a very likable bunch with likable songs in folksy, airily jazzy modes.

Maybe a punchier, slightly more aggressive sound would have rendered the group more imposing.

Michael Tearson

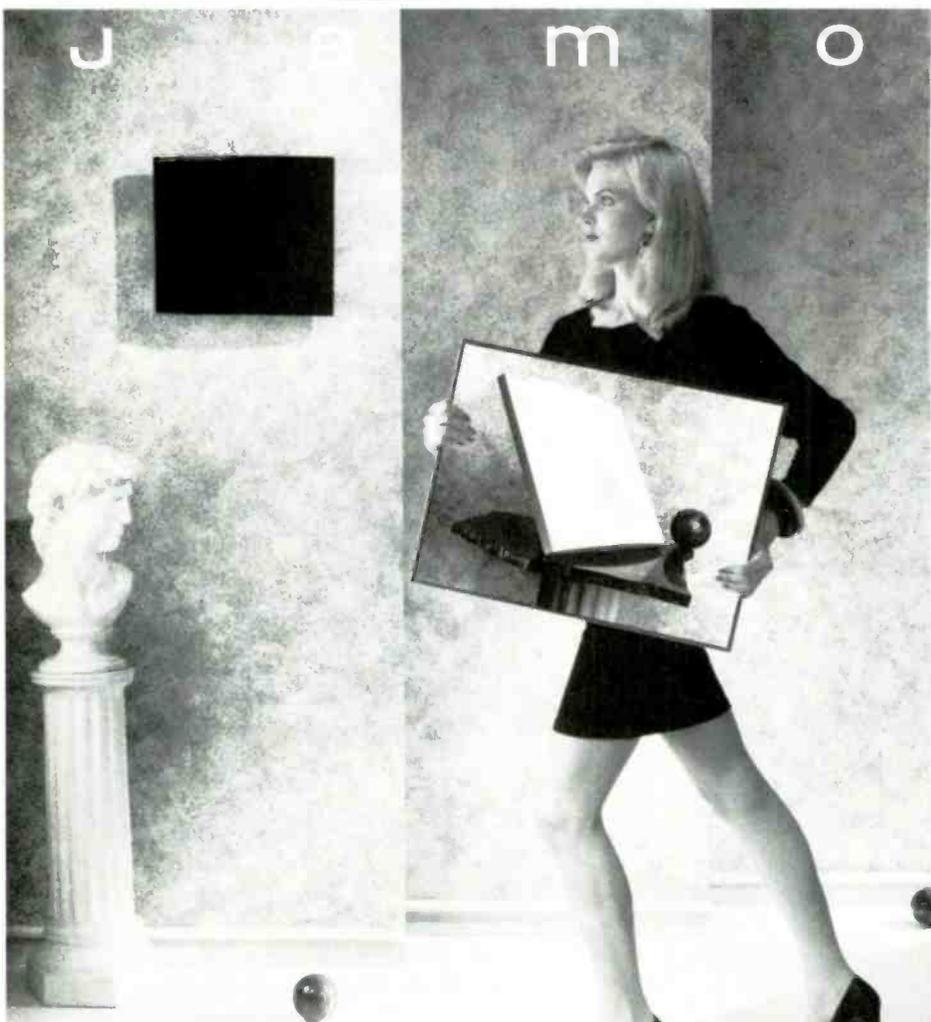
**Moons of Jupiter:** Scruffy the Cat  
Relativity 88561-8237-1, LP.

Sound: B Performance: B-

We take you now to a land of diners, burgers, and girls in summer halters—and of wallboxes, not boomboxes. With their second LP, college-radio fave Scruffy the Cat conjures a world of turquoise and Coca-Cola cherry red. Why they didn't release this in the summer, I'll never know, but get your beach towel ready anyway.

What with all the retro-'50s and retro-'60s stuff out there, it was only a matter of time before something like *Moons of Jupiter* would come along and put retro-'50s, retro-'60s, and retro-rockers all on the same vinyl. The five-man, Boston-based Scruffy announces its intentions right away with the wacky "Kissing Galaxy"—a garage-band song, if your garage happens to hold a two-seater flying saucer. And the rest of the album is a crazy quilt of all the upbeat melodic stuff you've ever heard on the road from Mersey to Memphis.

The result is a lot of fun, though not quite a total party—even the cheeriest chirping can get on your nerves after awhile. Scruffy the Cat's preponderance of obvious instrumental swipes (er, homages) makes you wonder if the most original thing about the band isn't the name. Tell you the truth, I was flashing back to the retro-'60s sound of The Hoodoo Gurus on *Mars Needs Guitars!* on more than one occasion—especially when I noticed how Scruffy also likes to thank pop-culture icons in their liner notes (although the '50s EC



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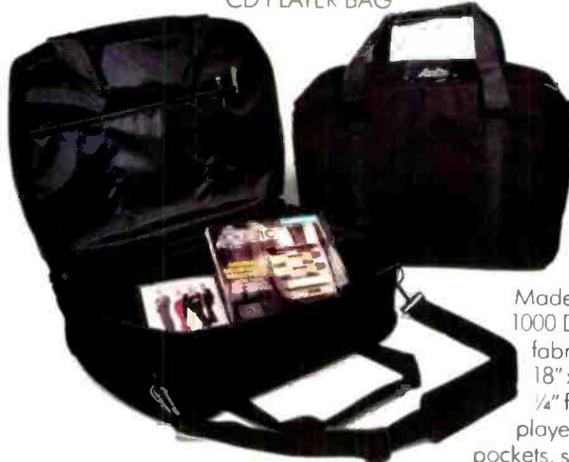
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Gipsy Kings' debut album is as unforgettable and striking as anything you are likely to encounter for a long time.

Comics artist is named Basil Wolverton, guys—not "Basal"). But if Scruffy falls into a niche, at least it's a rollick, not a relic.

There is, for instance, the bouncy "Bus Named Desire." It opens with a rapid-fire '60s dance-song opening lifted straight from a half-dozen Hullabaloo hits, and then progresses into slyly ironic vocals that keep the cut from getting too cute. The surf instrumental "Nova SS 1968" comes complete with handclaps, yet somehow it doesn't get too goofy. And in "Everything," you get the best examples of the sweetly silly lyrics found throughout this album: "In every yard in my hometown/small animals are underground/in the sewers and in the trees/even in their own documentaries."

For all good children who grew up on Captain Kangaroo, this album is respectfully submitted. Frank Lovece

**Gipsy Kings**  
Elektra/Musician 60845-2, CD; AAD; 43:30

Sound: A Performance: A

The Gipsy Kings make a thrilling sound that, from the album's opening all the way to the end, is very hard to ignore. Here, flashing guitars, ever the staple of the traditional Gypsy form, meet synthesizers, bass guitar, and occasional drums and percussion to bring the traditional to modern ears without really watering down the style or the impact one iota. The vivid and vibrant sound of the recording is a crucial ingredient in this album's glory.

The melodies the Kings play are pungent—plenty strong enough to rapidly work an inescapable path into the nervous system. "Bamboleo" and "Djobi Djoba," both of which have been hits in Europe, are the strongest pieces here. Their only cover is "A Mi Manera," which we know as "My Way," and it's wild to hear the song in this context.

Gipsy Kings has the potential to be a huge left-field hit in America. The band has it "in the grooves" in a big way. By reports, the Gipsy Kings' live show is a stunner. But for now, their debut album, recorded in France, is as striking and unforgettable as anything you are likely to encounter for a long time.

Michael Tearson

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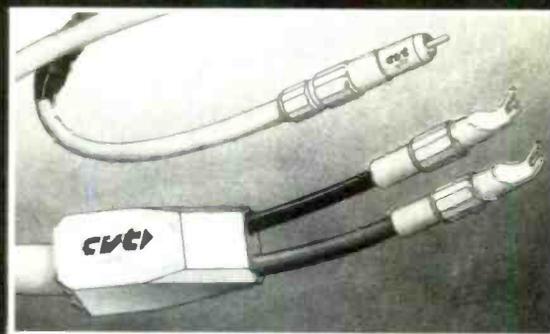
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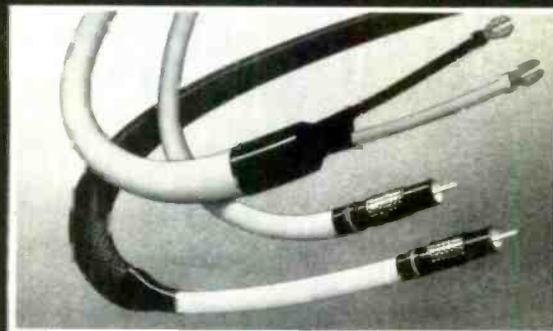
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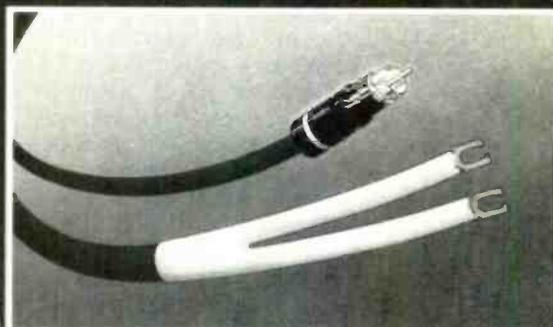
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Crystal CD-562; CD; DDD; 47:47.

**Jonathan Haas, Virtuoso Timpanist: 18th-Century Concertos for Timpani and Orchestra.**  
CRD-3449, CD; DDD. (Available from Kettles & Co., 142 West End Ave., #17N, New York, N.Y. 10023.)

"Lead reviews," the featured items of the month, tend toward the high-minded or the celebrity item, hopefully for listening joy. But the range of classical recording these days is so wide that we really have to spotlight the zany once in a while, just to keep things in perspective.

Take these two CDs. Thanks to gross oversupply, I have lately put aside piles of brass recordings, but one caught my eye. *Chestnut?* What do they mean? Somehow that doesn't seem to relate to the solemn subtitle. So I tried it.

Wham—out comes, of all things, the Khatchaturian "Sabre Dance," for brass, double speed. Definitely a chestnut, the piece drove us all crazy in every demo room during the earliest hi-fi shows! Did I have the wrong CD?

Not at all. With barely a pause for breath, the players move into three oh-so-classical 16th-century composers, played on old instruments, including that jolly old head-chopper, King Henry the VIII of England. No sooner did I adjust to this ancient music than there followed, just as incongruously, a brace of succulent mid-19th-century tidbits, on authentic brass of *that* time, followed, absolutely deadpan, by Cole Porter!

And so it went, leaving me musically gasping. Back to a sort of fantasy on music by one Arban, a late-19th-century brass pedagog—and, no doubt, local hero among brass players. Nice, if you could forget Cole Porter, not to mention Henry VIII. And finally, two big extras, strictly "classical" contemporary—or, rather, post-neoclassical in the manner of academic new music these days—which is neither Cole Porter nor Henry VIII, decidedly. First, a quite severe French lady (born 1924) named Denise Roger, and then a more gentle American, John Da . . . Hey, I used to know this John Davison as a 20 year old—he is now nearly 60—and his music sounds just like him.

So, you see, it's a "Department of Utter (Brass) Confusion," this CD, to borrow a famous phrase from *The New*

*Yorker*. Did the young players know it? After all, the music is indeed all brass, which is their world. Maybe they are dead serious. But that name—*Chestnut?* I enjoyed the whole of it.

As for the second CD, featuring a young genius of the timpani (plural), Jonathan Haas, it is infectiously absurd—no better description. Three little concerto-type works out of the elegant late-18th century, Mozartish. One composer, Johann Fischer, is pleasant but wholly insipid; the other, Georg Druschetsky, is a noticeably more able composer and quite easily listenable, especially his two-movement Concerto with a lovely Mozart-like orchestra for oboe and . . . Believe it or not, oboe and *eight timpani!* One man, of course, playing all eight.

Thus, behind all of this gentle, elegant, bland Mozartish music, you will hear what seems to be distant heavy thunder outside or, at times, a much louder effect, as of several bulldozers dropping huge boulders hither and yon, with bangs and thumps. Jonathan is terrific, but, at least on CD, that's how he sounds. Can't watch him.

If you listen *hard*, you'll even hear the drums playing tunes along with the orchestra. Singing bulldozers?

But the humorous payoff comes with the obligatory cadenzas for the "soloist," in all the right places—just as, say, in a flute or violin concerto. Can you imagine it? Here, the effect is as of an approaching tornado, dropping autos, lumber, oil drums, maybe a washing



Adam Fischer

Illustrator: Rick Tulka



Sir  
Colin  
Davis

machine, down from the heavens. I couldn't believe it.

In Haas' defense, you must understand that these works are authentic and were actually played (visibly) back in the 18th century. A new slant on the Age of Mozart. *Edward Tatnall Canby*

**Haydn: Symphony No. 96 in D ("Miracle"), Symphony No. 102 in B Flat.** Austro-Hungarian Haydn Orchestra, Adam Fischer.

**Nimbus NI-5135 CS, CD; DDD; 54:15.**

Here's another evidence of the part the arts play in international relations, as well as an expert and musical rendition of two late Haydn symphonies plus a short opera overture. The orchestra actually spans the border between East (Hungary) and West (Austria), playing in both countries on a permanent and equal basis. The musicians belong to both nations and have free access either way; the conductor is a dual citizen. The recordings were made in one of the grand palaces where these works were heard in Haydn's time. All this, of course, merely restores what once existed, when both these geographical areas were a part of the larger Austrian Empire that included most of the "East bloc" countries as well as parts of present Italy. Haydn himself moved back and forth from Hungary to Austria as part of the musical establishment of his prince.

These are pretty much standard concert performances for symphony orchestra. European division, as now practiced by most of the well-known orchestras, including our own in America. That is, the works are played on modern instruments, not the old "au-

thentic" type, but on a small scale approximating the size and instrumental roster that Haydn would have expected. The playing is good because the players are from the Vienna and Budapest Philharmonics and other top-rank ensembles of the region. Equally important, of course, is the unified homeland musical tradition that still exists there, never seriously broken by even the great wars and political disasters. For us who love music, this is a good thing to know—and to listen to.

*Edward Tatnall Canby*

**Tchaikovsky, Dvořák: Serenades for Strings.** Bavarian Radio Symphony Orchestra, Sir Colin Davis.

**Philips 422031-2 PH, CD; DDD.**

The Tchaikovsky and Dvořák Serenades for strings have always been among the most popular works for string orchestra. They are beautifully crafted, tuneful, and not incidentally, wonderful vehicles to "show off" an orchestra's string section.

The Bavarian Radio Symphony Orchestra of Munich is not a major orchestra in the sense of the Berlin or Vienna Philharmonic, but under the masterful baton of Sir Colin Davis, they play in world-class form. In terms of ensemble, intonation, and responsiveness, the string playing is splendid. The performances are difficult to fault and do full justice to this music.

Recorded in the lovely, warm acoustics of the Herkulessaal in Munich, this is a big, powerful, high-level sound, with great presence and definition. There is a broad stereo soundstage, precise instrumental localization, and a good perception of depth. Yes, it is multi-mixed, but done with taste and a light hand.

*Bert Whyte*

**Bartók: Concerto for Orchestra; Janáček: Sinfonietta.** Los Angeles Philharmonic, André Previn.  
**Telarc CD-80174, CD.**

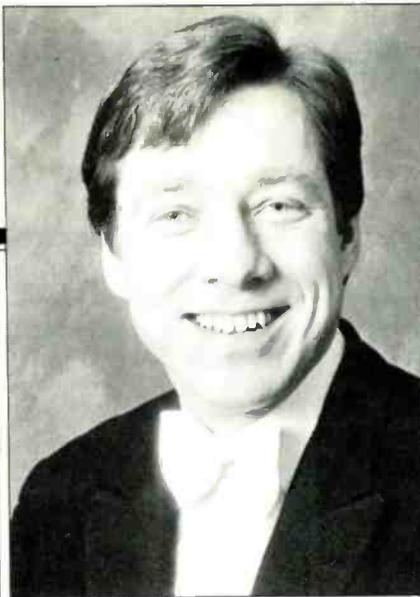
A good juxtaposition here, even though the two composers were a quarter-century apart and the two works are separated by some 20 years—1926 for Janáček, 1944 for Bartók. Listening, one feels that they definitely are out of a similar background and manner, and this is sensible: Both came from the large middle-European region of small nationalities which were within the Austrian empire until WWI, a region that was the cradle of the Western musical art (with Italy, Spain, France, England, etc. around the fringes). Politics tend not to change these similarities, even though they may try.

Beyond the interesting similarity, we have good performances here. André Previn, who once was a bit of a flashy *Wunderkind*, has gone on to become a persuasive interpreter of numerous



*André Previn*

Roy Goodman conducts the orchestra in a revealing and astonishing read of the great final movement of Beethoven's Ninth.



standard works all the way through what we might call the historical modern, like these pieces. The Los Angeles orchestra is always lively and perceptive; it *sounds* interested, given half a chance. (It liked this music, all right.)

In the dozens of recordings of the Bartók Concerto, I wait for some telltale moments. One is the incredible batch of parallel duets for two solo instruments of the same kind—two trumpets, two oboes, two clarinets—each at a different interval, ever so sagely chosen. The trumpets play in acid seconds, the clarinets in even more acid sevenths, the oboes in fifths. It can be stupid. Here, it is full of life! The other passage is the take-off of the heavy-weight Shostakovich Seventh, which Bartók detested—a silly little bit of a dance, followed by a huge orchestral guffaw. They get it here! Perfect. And so with the rest. I'd call this the recording of choice today among many that are less communicative.

Janáček is less forceful, but good listening. His strong point was opera, and he found a way to write for those very special big voices, which was modern but not impossible nor deliberately freakish, as was so much 1926 music. This piece, all instruments, fits into the picture with such as earlier Stravinsky, Prokofiev, and Hindemith. Temperately modern, you might say.

Edward Tatnall Canby

**Beethoven: Symphonies Nos. 1 to 9.**

The Hanover Band on original instruments; Roy Goodman and Monica Huggett; Oslo Cathedral Choir.

**Nimbus NI 5144-48**, five CDs; DDD.

All nine! And the good old Ninth, the bane of record producers throughout the LP era—it would not fit, whether on two sides or three—is ever so easily put on a single, not-too-long CD face. But this isn't the half, or the quarter, of it. The recording goes far beyond just the splendid feat of all-original instruments, played with the finesse of the modern types and not a sour note or a blooper to be heard in hours of music. The whole project, built up in the playing from 1982 to 1988 and in the preparation of newly scholarly special editions of each work for "decades," is a monumental undertaking and huge labor of love. These are not "midnight to

5 a.m." pickup sessions with a conductor jetting in and out to another continent! That obvious, earnest intensity of purpose reeks throughout and guarantees your closest attention.

It is hard, therefore, to have to put forth even petty criticisms, which take too much toll by far. All but one of the Symphonies are recorded in a Gothic (mod) church—stone, two tiers of tall arches minus decoration (to smooth the sound)—called, in typical British, "All Saints Tooting." It is an unfortunate venue for this music, not really at all like the surely warmer acoustics of the medium-sized aristocratic halls (holding 400 or so, as the notes point out) in which the works were originally heard and for which they were intended. This is a big, blurred Gothic sound, a long, confusing reverb, and my ear says it is also bumpy, with unpleasant overlapping waves and peaks further contributing to the confusion. In this cold sound, much of the Beethoven detail is smeared, and a fairly close miking of some of the elements still does not achieve a balance. It is a sort of toothpaste or gummy surround acoustic which blurs one, two, three chords into each other. I found it increasingly distressing as I went on. Even the rhythms are disturbed—those sharp, short Beethoven bursts (which do need some reverb, of course). And many a dramatic change of key becomes an undramatic smear.

By further misfortune, the two conductors include one who simply does not quit, who seems to ignore the acoustics, never allowing a musical breathing place, driving stonily forward (if in undoubtedly legitimate fast tempi, according to the best musicology). *Does he hear*, as we do? If not, he should have objected to the sound as heard in playback. This is Roy Good-

man, who conducts most of the works. His colleague, Monica Huggett—who leads the First, Second, and Fifth—has a clearly better ear for musical breathing in a difficult acoustic situation.

I must hastily add that there are many segments which rise, sometimes unexpectedly, to splendid heights of expression, and this from both Goodman and Huggett. The Fifth strikes me as the most impressive (Huggett), but the great final movement of the Ninth (Goodman) is astonishing, a really revealing performance of this often-heard and often-debased masterpiece. (In this case, oddly, it is because of slower, more sensibly paced tempi, so that the voices, both solo and chorus, do not scream and yell.)

To go into the fascinating details would take an entire issue of this magazine: The steely, scratchy sound of the strings; the smoothly played wind band (*Harmonie*); the startling, shallow bang of the timpani, and the complete "optional" repeats, rarely heard in toto even today. They make the Fifth into a really sizable work, instead of a shortie.

But the most powerful impression of all is the fact that this orchestra *sounds big and massive*, purely Beethoven, though it is much smaller than the conventional modern symphony orchestra. That is stunning proof that original instruments are *right*, given the heroic work of restoration and fully professional performance. This is indeed the sound that Beethoven heard, or should have heard, and it is awesomely impressive, acoustics or no.

The Ninth Symphony is already separately available on one CD, and I assume that others, probably in pairs, will soon be around to choice.

Edward Tatnall Canby

**Phases of the Moon: Traditional Chinese Music.** Central Broadcasting Traditional Instruments Orchestra.

**CBS MK 36705**, CD; ADD; 58:48.

After Nixon's famous visit to China, the doors to Chinese art and culture gradually began to open. *Phases of the Moon*, originally released on LP in 1981, was one of the first musical examples, and its rerelease on CD is long overdue. Because I avoid playing LPs (unless absolutely necessary), I haven't heard this recording for several

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Though *Phases of the Moon* is a compilation of folk music from China, its moods and feelings speak readily across cultures.

years. so I listened to the CD with fresh ears. and it was a treat to hear this music refurbished for the format.

How does traditional Chinese music sound to Western ears? Fear not—you won't be confronted with inscrutable sounds too bizarre to comprehend. The music on this disc is quite melodious and easily accessible. even if you don't know anything about Chinese music. You might just find yourself singing or humming melodies. as I did. McLuhan's concept of the "global village" has become a reality since he wrote about it in the '60s. Technology. from satellites to CDs. has played a major role in acquainting us with the art and culture of people all over the world. Two recent examples of this "small world" effect come to mind. The ceremonies at the Seoul Olympics gave us an opportunity to hear exotic Eastern musical sounds on TV. The current Broadway show. *M. Butterfly*. which features Chinese music performed live on-stage. is a smash hit. Twenty years ago. it might have been an obscure Off-Broadway production. But today. the music carries its meaning to Western listeners and is an essential ingredient of the show.

Because *Phases of the Moon* is a compilation of folk music. the moods and feelings expressed communicate across the cultures quite readily. Some pieces are joyous dances: others are quiet and introspective. "Dance of the Yao People" alternates between delicate. serene passages and excited. agitated segments. The 20-page booklet is quite helpful. covering the background of Chinese culture and commenting on each piece.

Although the audio quality is acceptable. the recordings. made by the China Record Company. date from 1980. What equipment they may have been able to acquire before China opened its doors to the West is difficult to guess. Most of the time. the music is fairly quiet. and the sound quality is fine. At high overall levels or when high frequencies dominate. however. you'll hear exactly the kind of analog distortion you'd expect. and two of the tracks are in mono. But don't let any of this bother you. Relax and enjoy the music—and hope for new digital recordings of this exquisitely charming music in the future.

Steve Birchall

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## LIFE CYCLES



**Dial & Oatts:** Garry Dial and Dick Oatts  
**dmp CD-465, CD; DDD; 62:13.**

Right from the opening seconds of solo sax and strings, the immediacy and liveness of the sound on this CD captured my attention. Some recent developments in recording technology have raised the level of quality, and this disc is one of the first examples. The process that engineer Tom Jung used is fascinating. With outboard analog-to-digital converters, he was able to digitize the signals immediately after the microphones, send those signals through a digital mixer, and then on to a digital tape recorder—without ever reentering the analog domain!

Jung recorded the jazz quartet alone on a DAT deck through a digital mixer, then transferred the signal to an open-reel digital recorder for editing. Later, he copied the edited stereo quartet tracks to a digital multi-track recorder and added the string tracks. Using the digital mixer, he combined the quartet

and string tracks and recorded the final mixdown on a DAT. That mix went back to the stereo open-reel machine for final editing and then to a DAT cassette, which he sent to the CD pressing plant. Now, that's a lot of signal manipulation, and on analog equipment, the signal loss would be unacceptable. However, by using the new digital hardware, Jung retained the clean sound of a direct-to-stereo recording while gaining the flexibility of multi-tracking. The result is a breathtaking recording that sets a new standard for clarity.

Sonic details leap out everywhere. From the pure, sweet sounds of the sax to the satisfying, full-bodied sound of the bass, the music seems to jump out of the speakers. Even the tiniest details are audible without being obtrusive. In "The Perfect Pill," listen to the clean, crisp sound of the drum stick on the hi-hat cymbal. It's buried far down in the musical texture, but it's still clearly audible. The string sound is crisp and clean, without a trace of harshness and with just enough reverb to make it come to life.

Dick Oatts is the sax player for dmp's award-winning group, Flim & The BBs, and Gary Dial is pianist for the Red Rodney Quintet. So the style is exactly what fans of Flim & The BBs would expect, but this is the most ambitious project to date, since Dial and Oatts regard the entire disc as a single composition. It encompasses a wide variety of moods and styles, with a kind of *thirtysomething* story line linking all the songs together. Things start out relaxed and laid-back, but dramatic conflicts soon arise as the themes and

characters interact. At the end of "Kept Woman," chaos enters, and the quartet members go off in their own directions, forgetting the common beat and tempo—a neat musical effect that makes the mellow ending more effective. The free-spirited sax solo in "The Firing" seems to be going in the same direction but dissolves when the strings enter to cool the excitement. Film composer Carlos Franzetti wrote the string arrangements and conducted the orchestra. If you want a taste of recording techniques of the future, combined with well-played, imaginative music, listen to *Dial & Oatts*.

Steve Birchall

**Design: Interior**  
**Windham Hill WD 1087, CD; 34:25.**

New Age music with strong overtones of Liszt and Bach make *Design* a strange, but strikingly beautiful, recording. In concept, the six tracks are all derived from the same source material (the opening of the first track, "Gaia"). That's the Liszt influence, because the overall structure of *Design* is similar to the movements of a 19th-century tone poem. More than simply a set of variations, the individual movements have distinctive themes developed in their own way. But the themes all come from the original source.

"Gaia" actually provides two main musical ideas: A melodic line and a motoric accompaniment figure. That's the Bach influence, because it is similar to the technique he used in many of the preludes in the unaccompanied cello and violin suites. It plays an important role in all six tracks of *Design*—



Photograph: Dave King

# THE ART OF JAZZ



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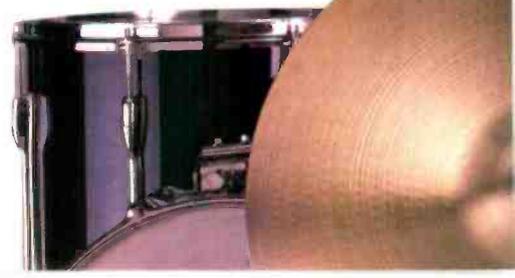


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Stylistically, Tito Puente has been playing this type of music for years, but he continues to make it sound fresh and new.

lespie's historic collaboration with legendary Cuban conga player Chano Pozo in the '40s, many jazz greats, including John Coltrane, Charlie Parker, and Miles Davis, have taken the opportunity to blend Latin and jazz into one music form. Puente has always been on that musical front line, melding salsa's rhythmic exuberance with jazz's melodic introspection.

Tito Puente's latest recording is on the Concord Picante label (*picante* means "spicy hot" in Spanish), part of the well-known California-based Concord Jazz label. Perhaps as important as the release itself is the fact that there is a label waving the flag for such music.

This CD features Puente on vibes and, of course, on timbales. Although Puente is, in fact, credited with introducing the vibes into Latin music, his skill on the timbales generally overshadows his reputation as a vibraphonist.

Tito Puente has always played with and led big bands. He likes the harmonic possibilities available with large groups. Here, though, the group is somewhat smaller—up to 10 musicians play behind him, including the excellent pianist Sonny Bravo. Joining in on three tracks—George Shearing's "Consternation," Thelonious Monk's "Pannonica," and Neal Hefti's "Repetition"—is alto saxophonist Phil Woods.

While the music on *Salsa Meets Jazz* is newly released, it is certainly not new to Puente and his fans. Stylistically, he has been playing and writing similar music for years. Some readers may even remember hearing these types of melodies at New York's Palladium ballroom in the '40s and '50s. What is remarkable is how fresh and innovative these stylings remain. Puente is playing as creatively as ever, and his arrangements continue to be innovative. Latin music tends to be composed of a wall of brass, with punctuating horns acting as another rhythm section. This style can either be highly sympathetic to jazz soloists, or it can overwhelm them. Here, it supports the solos, helping to highlight the strong sounds brought forth by Woods, Bravo, and Puente.

If properly promoted, *Salsa Meets Jazz* could help to bring Puente additional well-deserved attention. The

and if you doubt the Bach influence, then just give a listen to "N.Y. 1908." The solo piano line sounds like a Bach cello suite transcribed for piano, complete with accented notes to make secondary melodies and harmonies pop out and to suggest the implied counterpoint.

Interior has paid attention to the problems of creating appropriate acoustical spaces for their music. Instead of finding one good imaginary environment for the entire disc, they vary the ambient quality to achieve greater expression. The first track begins boldly and energetically with a big, orchestral, concert hall sound. In "N.Y. 1908," the solo piano exists in a much smaller, more intimate space, with some subtle left-to-right shifting of the sonic focus. Interior continues to alternate spacious and intimate environments for the remaining tracks, but the spatial effect is different each time, and is beautifully matched to the musical ideas.

This is one of the first examples of the new guitar-style synthesizer controllers to filter through the pipeline. In the future, we can expect to hear much more synthesizer music created by both guitar and woodwind controllers. After all, a keyboard is only one way of playing an electronic instrument. Alternative controllers offer the advantage of playing techniques unique to strings

and woodwinds. An easy-to-hear example of the guitar controller is in "River." The musical gestures would be impractical and difficult on a keyboard.

The only complaint I have is that the disc is short (34:25), even by LP standards. I understand the artistic reasons behind this: Interior considers *Design* a complete, self-sufficient work, and they didn't want to dilute its effect by putting extraneous filler on the disc. I oppose the notion of buying CDs on a price-per-minute basis, or rejecting those with less than 60 minutes on them. If you love music, that's just plain foolish. Nevertheless, this is a skimpy disc, and Windham Hill is a pricey label. Interior's music is interesting, and I'd like to hear some shorter pieces to put *Design* into a better perspective.

Steve Birchall

**Salsa Meets Jazz:** Tito Puente and His Latin Ensemble

**Concord Picante CCD-4354, CD;** 43:31.

Sound: B+ Performance: A

It should be obvious that, at this stage in his career, bandleader/percussionist Ernest "Tito" Puente is *el rey de los músicos Latinos*—the king of Latin musicians. Perhaps not so obvious to many listeners is Puente's long-time involvement with, and extensive contribution to, jazz. Since Dizzy Gil-

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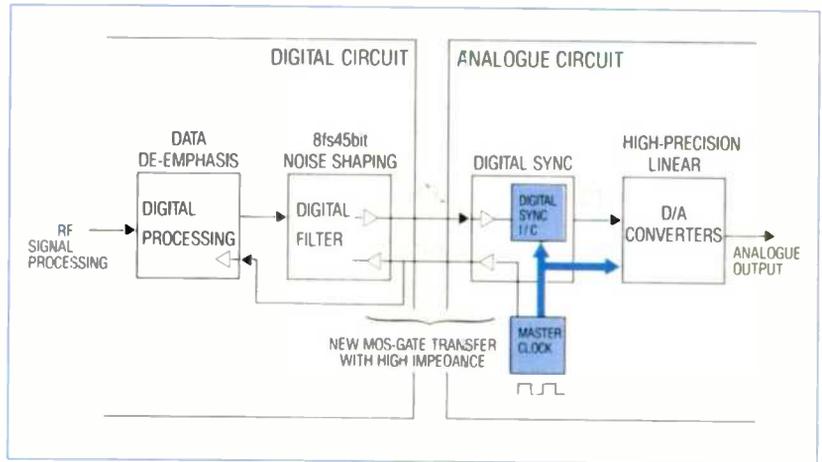
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Albert King's vocals are bold and expressive, and *Blues at Sunrise* captures him in tip-top form.



public will get to hear his music in CD quality, well recorded and produced. The music is powerful, vibrant, and historically significant. Tito Puente probably has over 100 records to his credit. If you don't have even one, *Salsa Meets Jazz* would be a good place to start.

Hector G. La Torre

**Blues at Sunrise:** Albert King  
Stax 8546-1, LP; SCD-8546-2, CD;  
AAD: 45:49

Sound: A - /B + Performance: A

Recorded live at the Montreaux Jazz Festival in 1973 and released now for the first time as part of Fantasy's ongoing resuscitation of blues and soul classics from the Stax vaults, this tasty set captures King in tip-top form and having fun. His fat, biting, sour guitar slithers and slices with both short fills and extended jams, and illustrates just how much influence he had on the style of players like Clapton, et al. King's vocals are bold, mature, and expressive. Backing by combined Memphis-style horns and Hammond organ provides a trademark Stax sound and the soulful inspiration which King popularized.

Produced from the original masters, Albert King's *Blues at Sunrise* sounds excellent on both LP and CD, especially given the fact that it was recorded over 15 years ago. Definitive Albert and very hot blues. *Michael Wright*

**Dreamtime Return:** Steve Roach  
Fortuna 2CD 18055-2, two CDs; ADD;  
65:00 and 62:44.

Sound: A Performance: A -

**The Leaving Time:** Steve Roach and Michael Shrieve  
RCA Novus 3032-2-N, CD: 45:26.

Sound: A Performance: A -

Steve Roach has been orchestrating synthesizer dreamscapes for six years. Up until now, he's been defined by the airy, slow-motion surf music of *Structures from Silence*, his most popular album. But two new releases, *Dreamtime Return* and *The Leaving Time*, should expand that definition.

*Dreamtime Return* takes its cues from *Structures*, with textures that shift with the graceful evolution of clouds shot from a satellite. It's an album of atmospheres and environments that was inspired by Roach's travels to Australia and his soundtrack for *The Art of the Dreamtime*, a documentary film on aboriginal art.

After the high-energy launch of "Towards the Dream," with its reverberant percussion, ostinato sequencers, and slowly swirling synth lines, Roach cre-

Photograph: Frank Driggs Collection

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Sounds from Australia weave into the mix like subtle sonic cues. Recordings of aboriginal songmen are mixed into "Red Twilight." David Hudson plays the didjeridu, an Australian wind instrument made out of a long, hollow wooden tube that drones alongside Roach's synthesizers on "Songline," a human moan in a technological world. "The Other Side" is the other side of wind instruments, with Kevin Braheny playing long violin-like lines on his Steiner Electronic Wind Instrument.

*Dreamtime Return* is a major statement by Roach, and occasionally the concept and purpose outstrip the music, but not often. "Looking for Safety" plays out a melody over its 31 minutes, but like a few other pieces on *Dreamtime*, its slow-motion beauty becomes somnambulant if you listen too closely. The CD, incidentally, has around 40 minutes more music than the LP.

The other side of Roach's work can be heard in his album with ex-Santana drummer Michael Shrieve, *The Leaving Time*. Shrieve, who plays electronic as well as acoustic percussion, synchronizes with Roach in the grandiose rhythm of the title cut, a sort of ceremonial space march. Roach drapes synthesizer swirls around the bittersweet melody played by guitarist David Torn. Torn is all over this disc, lending an edginess and almost psychotic intensity to the music. His solos break and shudder like a wailing banshee against the perfected electronic rhythms.

*The Leaving Time* marks the return of Michael Shrieve to recording, and his fluid rhythms give a needed dimension to Roach's synthesized perfection. "Tribes" shows Shrieve's input, with its heavily percussive rhythm churning like an African drum choir. Even the melody sounds like a percussive device. Torn propels it into the stratosphere with a solo that alternately rings and squalls.

"Big Sky" takes on a Steve Reichian feel with its delayed metallic percussion sounds, phasing patterns, and sequencers, while "Edge Runner" is a headlong dervish of pounding, churning rhythm and screaming synthesizers and guitar.



Michael Shrieve's rhythms give needed dimension to Steve Roach's synthesized perfection on their new disc, *The Leaving Time*.

*The Leaving Time* has a sense of spatial depth on this CD. Shrieve's electronic drums, like the bottom-heavy tablas of "Big Sky," punch out a crisp, deep bass, while the grit of Torn's processed guitar contrasts against the smooth sheen of Roach's synthesizers. *John Diliberto*

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Milt Jackson's new LP has many choice moments where his quartet hits and holds a groove for satisfying stretches of time.

On closer examination, though, the session made perfect sense. *Red Hot and Blues* is an amalgam of great talent, an impeccably conceived stylistic meeting of five veteran players with vast experience who know when to assert themselves and when to sit back. Sensitivity is clearly the name of the game here.

The front line not only includes Kessel but also Hutcherson's vivacious vibraphone and Barron's kingly piano. A composition doesn't go by without the three maneuvering toward and away from each other.

Add to this weaving and bobbing the buoyancy of Reid's startlingly strong and continually engaging over-the-top bass and Riley's always tasty, tremendously subtle and varied drumming. What you have is pure joy—whether on a rendition of Sammy Cahn's standard, "It's You or No One," on samba-and-bossa-tempoed excursions such as Laurindo Almeida's "Barniana," or on Kessel's churning, chugging "Messin' with the Blues" and his "Rio."

Kessel, now on the cusp of senior citizenry, drives as hard as ever on his "Blues for Bird," an up-tempoed Monk-ish fete. And why shouldn't it work? He's playing with half of the group Sphere and "Lady Ace" Hutcherson, whose last recording employed Barron. Monk would be proud of this effort.

"You've Changed," a ballad with a beautiful chord structure, brings out the best in Hutcherson, Barron, and Kessel. It allows the master vibist to exploit his ability to accent and hold the right notes as only he can. Bobby Hutcherson employs his special gifts of time and delivery and gets the chance to use a touch of vibrato. Barron and Kessel, meanwhile—with Reid and Riley lying low—follow with solos that could melt steel. Believe it or not, the group duplicates this feat on the album's other ballad, a blues entitled "I'm Glad There Is You."

In the end, the fivesome takes us out with the high-steppin' "By Myself." This cut features Kessel, Hutcherson, and, finally, Barron—first in extensive and consecutive scrambles, then trading fours, but pushed throughout by a bass drum duo that has no intention of relenting.

*Red Hot and Blues* is exactly that.  
Jon W. Poses

**A London Bridge:** Milt Jackson Pablo 2310-932, LP.

Sound: A — Performance: B +

This is the second release from a series of live 1982 dates that Milt Jackson and company recorded at the famed London jazz spot, Ronnie Scott's. In the last several years, the tireless vibraphonist has been forced to seek out projects that go beyond the Modern Jazz Quartet—for the simple reason that work with John Lewis, et al., does not satisfy Jackson's still-growing curiosity and brave sense of improvisation. While he might appreciate the rewards and reap the benefits of an MJQ resurgence, Jackson's not into nostalgia.

A *London Bridge* contains many choice moments, whole selections and sections where this quartet—with the same instrumentation as the MJQ, incidentally—hits a groove and holds it in place for satisfying stretches at a time. The group's potency and potential couldn't be better expressed and delivered than in the opening track, a sterling, up-tempoed, slightly bluesy interpretation of John Coltrane's "Impressions." Bright and flavorful, the group quotes generously and with deference, filling the tune nicely with Miles Davis' "So What."

The underlying problem with the music on this record is that there are too many crowd-pleasing clichés—finishing and predictable touches when songs end. At times, such frivolity distracts and, ultimately, sounds like musical overstatement. This is especially unbecoming from this first-rate and usually consummately professional rhythm section: Pianist Monty Alexander, bassist Ray Brown, and drummer Mickey Roker.

In all fairness, Brown and Roker, who know and collectively have been play-

ing and recording with Jackson for more than a half-century, never miss. And, like Jackson, these guys know how to swing hard; the approach and feeling is captured clearly and stated with authority in Tadd Dameron's "Good Bait," on Brown's "FSR" (For Sonny Rollins), and Alexander's "Reggae/Later."

In the end, Alexander may indeed be at the center of virtually all the trouble spots on this disc: his over-flowery and sometimes heavy-handed frills, regardless of intent, can take away, more than add to, a musical episode. While praise is due him for his playing on the ballad "Close Enough for Love" and the Bobby Timmons-like "Captain Bill," the pianist sounds unimaginative, even repetitive, too often for my taste. He relies occasionally on that age-old jazz trick of quoting a bar or measure from a folk or pop tune as well. Humor and wit-filled jazz can be wonderful, but do we really need to hear Alexander's "Old Susannah" in the middle of the aforementioned "Impressions"?

More recently (remember, this date has been in the can for seven years), Jackson has employed pianist James Williams. I suspect that Williams' nonsense swinging provides Jackson with a slightly stronger match than Alexander.  
Jon W. Poses

**Red Hot and Blues:** Barney Kessel Contemporary C-14044, LP.

Sound: A — Performance: A

In listening to guitarist Barney Kessel's *Red Hot and Blues*, something kept nagging at me: How could this quintet—comprised of a West Coaster (Bobby Hutcherson), three Easterners (Rufus Reid, Kenny Barron, and Ben Riley), and a leader from the Midwest who's worked in La-La Land on radio, TV, and films—groove so, so well?



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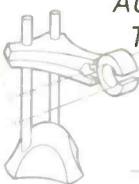
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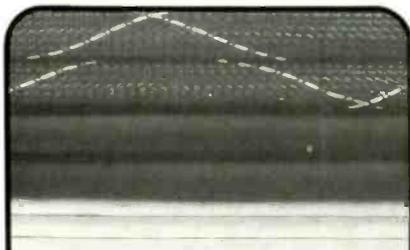
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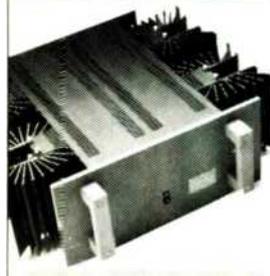
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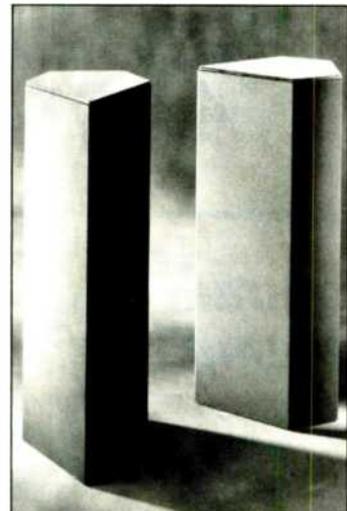
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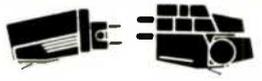
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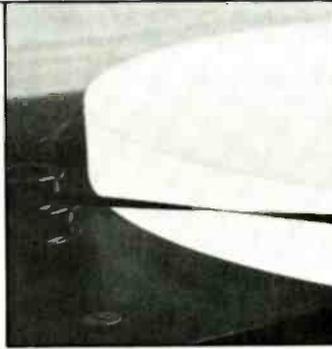
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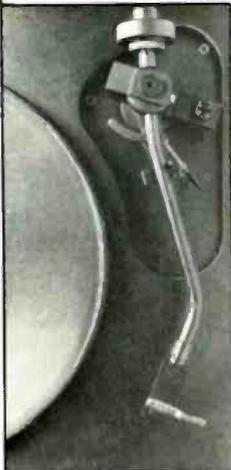


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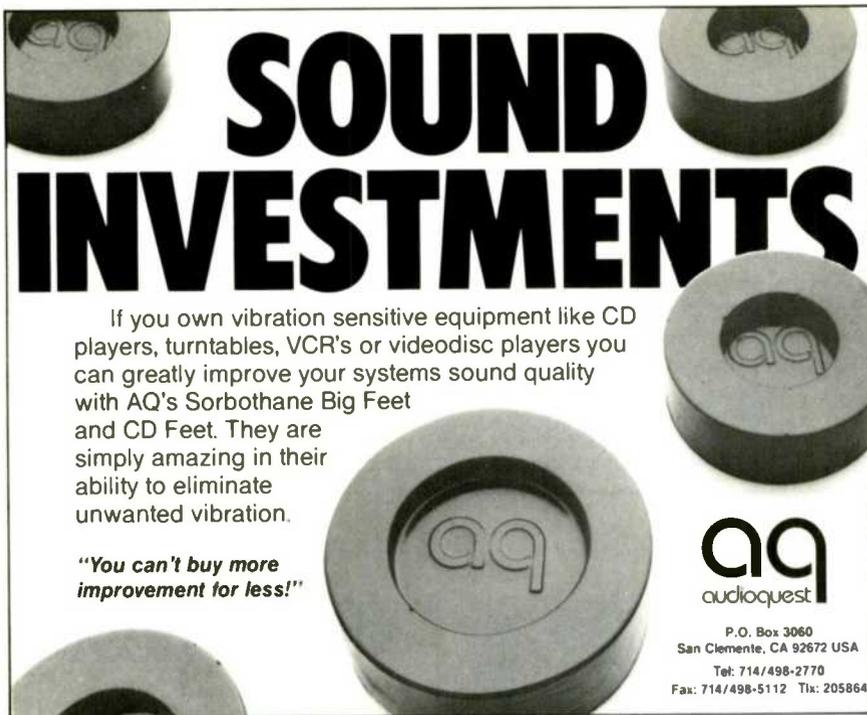
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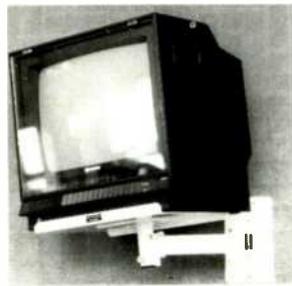
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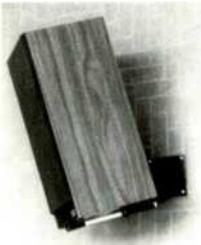
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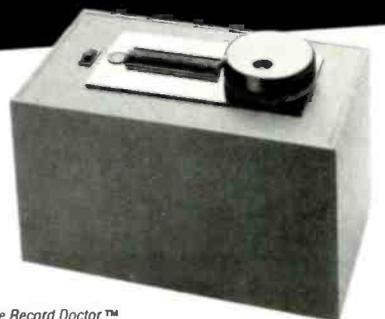
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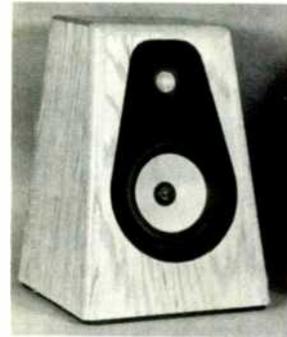
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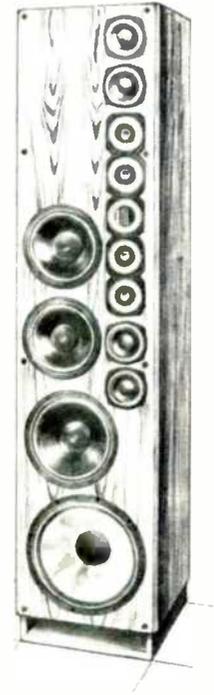
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## TIPS FOR MAIL ORDER PURCHASERS

It is impossible for us to verify all of the claims of advertisers, including product availability and existence of warranties. Therefore, the following information is provided for your protection.

**1. Confirm price and merchandise information** with the seller, including brand, model, color or finish, accessories and rebates included in the price.

**2. Understand the seller's return and refund policy**, including the allowable return period and who pays the postage for returned merchandise.

**3. Understand the product's warranty.** Is there a manufacturer's warranty, and if so, is it from a U.S. or foreign manufacturer? Does the seller itself offer a warranty? In either case, what is covered by warranty, how long is the warranty period, where will the product be serviced, what do you have to do, and will the product be repaired or replaced? You may want to receive a copy of the written warranty before placing your order.

**4. Keep a copy of all transactions**, including cancelled checks, receipts and correspondence. For phone orders, make a note of the order including merchandise ordered, price, order date, expected delivery date and salesperson's name.

**5. If the merchandise is not shipped within the promised time** or if no time was promised, 30 days of receipt of the order, you generally have the right to cancel the order and get a refund.

**6. Merchandise substitution** without your express prior consent is not allowed.

**7. If you have a problem with your order or the merchandise**, write a letter to the seller with all the pertinent information and keep a copy.

**8. If you are unable to obtain satisfaction from the seller**, contact the consumer protection agency in the seller's state or your local U.S. Postal Service.

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