NEW IN AUDIO: tape equipment, speakers, accessories at CES

JAMES GALWAY tells how he makes the classical flute popular

EQUIPMENT TEST REPORTS: Allison Electronic Subwoofer
Audio-Technica AT25 Phono Cartridge • Mordaunt-Short Festival Series 2 Speaker
Pioneer SA-7800 Integrated Stereo Amplifier • Rotel RT-2100 FM Tuner

THE NEW SUBWOOFERS — for the low, low bass you can FEEL
A great high fidelity system is very easy on the ears, but not always very easy on the budget.

But now, for this month only, you can buy Pioneer high fidelity components for savings unlikely to be repeated.

For the first time in history you can take advantage of the great Pioneer Month Sale.

Pioneer has reduced many prices to our dealers for this sale to make it possible for them to pass these savings on to you.

Every receiver has been specially priced. Including the industry's best selling SX-780, which critics say, "has a level of performance that's hard to distinguish from that of much more expensive receivers."

Every quartz turntable. Including Pioneer's high-end PL-630.

Even our PL-518, already considered by many to be the best engineered direct drive turntable for the money, has been specially priced.

The great Pioneer Month Sale also covers tape decks. Including the hottest selling deck of the year, the CT-F-900, featuring Fluorocan metering. Our latest series of amps and tuners. Speakers. Headphones. Even add-ons. Like our TV tuner that brings big screen sound to the little screen.

Most people think they have to wait till January to afford the component they wanted to give in December. But not anymore.

So if the component you set your heart on costs an arm and a leg, come to your local Pioneer dealer during Pioneer Month Sale. You'll find the item that was once out of reach is now within your grasp.

Pioneer Month Sale is only at your participating Pioneer dealer. Look for the Pioneer Month Sale wall poster or banner in your dealer's window. It will direct you to Pioneer Month Sale, that's really the sale of the year.
THE GREATEST NAME IN HI-FI ANNOUNCES THE GREATEST EVENT IN HI-FI.
Direct-to-Disc and digital recording have added a fantastic new dimension to the listening experience. Greater dynamic range, detail, stereo imaging, lower distortion and increased signal-to-noise ratio are just a few of the phrases used to describe the advantages of these new technologies. In order to capture all the benefits of these recordings, you should have a phono cartridge specifically designed to reproduce every bit of information with utmost precision and clarity and the least amount of record wear.

The Empire EDR.9 is that cartridge. Although just recently introduced, it is already being hailed as a breakthrough by audiophiles, not only in the U.S., but in such foreign markets as Japan, Germany, England, France, Switzerland and Sweden.

What makes the EDR.9 different?

1. Within the cantilever tube, we added a mechanical equalizer. It serves two purposes: (1) to cancel the natural resonance of the cantilever tube, and (2) to improve the overall transient response of the cartridge. The end result is a stylus assembly that has a mechanically flat frequency response. The frequency response extends from the 20Hz to 35Hz with a deviation of no more than ± 1.75 dB. No other magnetic cartridge has that kind of performance. We call this stylus assembly an "InertiaLly Damped Tuned Stylus": the refinement of which took over 6 years.

2. Contact area of Elliptical Diamond.

3. Conventional cartridges exhibit radical changes in their frequency response when connected to different preamplifiers. This is because the load conditions—the amounts of capacitance and resistance provided by the preamp—vary tremendously from one preamp to another, and from turntable to turntable. Consequently, most phono cartridges, even expensive ones, have their frequency response determined essentially by chance, depending on the system they are connected to.

But the electrical elements of the EDR.9 have been designed to remain unaffected by any normal variations in load capacitance or resistance. Thus, the EDR.9 maintains its smooth frequency response and accurate transient-reproduction ability in any music system, irrespective of loading conditions.

4. Then, as a final test of performance, we listen to every EDR.9 to make certain it sounds as good as it tests. At $200, the EDR.9 is expensive, but then again, so are your records.

For more detailed information and test reports, write to:

Empire Scientific Corp.
Garden City, NY 11530
NEW PRODUCTS
Roundup of the latest audio equipment and accessories

AUDIO QUESTIONS AND ANSWERS
Stereo Image and Depth, Diamond in the Buff

AUDIO BASICS
A Decade in Audio

TAPE TALK
Improving Cassette Treble Response, Tape Clubs

TECHNICAL TALK
Are Stereo Images Real?

EQUIPMENT TEST REPORTS
Hirsch-Houck Laboratory test results on the Mordaunt-Short Festival Series 2 speaker, Pioneer SA-7800 integrated stereo amplifier, Audio-Technica AT25 phono cartridge, Rotel RT-2100 FM tuner, and Allison electronic subwoofer

SUBWOOFERS
You don’t need low bass often, but when you need it you need it

WHAT’S NEW IN AUDIO
Concluding the report on the 1979 Summer CES

JAMES GALWAY
"People want some magic, and that’s what I want to give them"

BEST RECORDINGS OF THE MONTH
Morton Gould: State-of-the-art Digital
The Clash: Perspective on Punk
Shostakovich: Lady Macbeth of Mtsensk

POPULAR DISCS AND TAPES
The Jukes: Solo Flight
The Kinks: "Low Budget"
Joni Mitchell: "Mingus"
Diana Ross: "The Boss"

CLASSICAL DISCS AND TAPES
Fiedler Finale
Haydn’s Riches
Phantasmagoria Musica

BULLETIN
William Livingstone

SPEAKING OF MUSIC
William Anderson

LETTERS TO THE EDITOR

INSTALLATION OF THE MONTH
Gary Stock

GOING ON RECORD
James Goodfriend

THE POP BEAT
Paulette Weiss

ADVERTISERS’ INDEX

COVER: Design by Borys Patchowsky; photo by Bruce Pendleton. Shown: Acoustique 3A’s Triphonic 1200 subwoofer (see page 70 for more).
INVESTMENT LETTER

Postulate: Your records are valuable aids to pleasure and relaxation.
Postulate: Your record investment totals more than $1,000 (one thousand dollars), and should be protected.

Supporting data: Replacement costs are escalating; some specimens unavailable.
Supporting data: Dust is the most destructive element to records. Dust settles on all records and may be welded in by the tracking stylus.

Prospectus: The DISCWASHER D3 Record Cleaning System, with unique unidirectional micro-fibers, lifts off dust—rather than just lining it up. Results are visual, sonic and clearly protective of investment. Cost of system is only $15 (fifteen dollars). Has lifetime milled walnut handle and includes DC-1 Pad Cleaner.

Addendum: Be guarded of imitations. Sound investments should be protected by the proven expertise of DISCWASHER LABS.

Seek out DISCWASHER® products at dealers worldwide who are interested in preserving your musical portfolio.

discwasher, inc.
1407 N. Providence Rd.
Columbia, Missouri 65201

circle no. 21 on reader service card
INCREASED PLAYING TIME IS PROMISED for metal-particle microcassettes by a new tape-manufacturing process perfected by Matsushita Electric. A cobalt-modified metal alloy is vacuum-vapor deposited directly on the surface of the tape’s plastic backing instead of mixing the magnetic particles with an adhesive resin binder. Longer playing time is achieved because the entire surface of the new tape is composed of magnetic material, thus providing more efficient performance with a thinner coating.

THE BEST MALE PERFORMER FOR 1979 AWARD went to Teddy Pendergrass at the Disco Music Awards in Hollywood. Wolfman Jack made the presentation, which honored “...those artists who have given a new and exciting beat to the lives of all of us, as selected by the USA’s top 200 radio stations.” Pendergrass’ current album is “Teddy” on the Philadelphia International label.

THE INTERNATIONAL GRAND PRIX for recordings of the music of Franz Liszt, awarded in Budapest on October 22, the composer’s birthday, goes to (among others) Claudio Arrau’s two-disc set of the etudes (Philips 6747 412) and to the Alfred Brendel recording of the Weinen, Klagen Variations and other works (Philips 9500 286).

SONY’S NEW 72-INCH PROJECTION TV is suspended from the ceiling. Since the projector unit is over the heads of the viewers, it does not block their view of the wall screen. The system reproduces color-TV broadcasts and images from video-cassette recorders. Now on sale in Japan for about $7,500, it may reach the United States by the end of the year.

THE ST. LOUIS SYMPHONY ORCHESTRA will celebrate its 100th anniversary during the 1979-1980 season. The celebrations include world premieres of new works by Witold Lutoslawski, Robert Wykes, and David Del Tredici, and a number of new recordings by the orchestra under music director Leonard Slatkin will be issued by Vox. These include the complete film scores of Prokofiev, a digital recording (the orchestra’s first) of the Carmen and Peer Gynt Suites, and direct-to-disc recordings of works by Shostakovich, Tchaikovsky, and Ravel.

IMPORTED STATE-OF-THE-ART RECORDINGS are listed in a new free AudioSource catalog that includes nearly 300 pop, jazz, and classical titles. The labels represented include Lyricon (Sweden), Merlin (England), Sarastro (France), and Three Blind Mice (Japan) as well as the Japanese affiliates of Philips, Mercury, and RCA. Write AudioSource, 1185 Chess Drive, Foster City, Calif. 94404.

PORTABLE AM/FM/CASSETTE/TV SETS are not new, but Sharp has added a feature that was previously unavailable: a full microcomputer. The TV screen serves as the computer display, and the cassette recorder doubles as the external memory unit. The computer’s built-in memory contains programs devoted to math and statistics, games, and educational and business subjects. A hard-copy printer that connects easily to the unit is also available from Sharp.

A TRAINING CENTER FOR DISCO DJs is now operating in New York City under the auspices of Disco-Van 2000 and Hunter College’s Lifelong Learning Program. The Center will conduct weekly seminars that give theoretical background and practical experience with sound and light systems. Enrollment is limited to ten students per seminar. Tuition: $400. Write to the Learning Center for Disco Programmers, 511 West 54th Street, New York, N.Y. 10019.

RCA’S SELECTAVISION VIDEODISC CATALOG will initially comprise 250 titles, including feature motion pictures and sports, cultural, and educational shows. Among the latest acquisitions are Franco Zeffirelli’s seven-hour epic Jesus of Nazareth and twenty-one Charlie Brown programs. Introductory date for RCA’s videodisc will be announced later this year.

GREAT PERFORMANCES ON PBS THIS MONTH include a concert by Joan Sutherland, Marilyn Horne, and orchestra conducted by Richard Bonynge in Exxon’s Live from Lincoln Center series on October 15. Leonard Bernstein conducts the Vienna Philharmonic in Mahler’s Ninth Symphony on October 17, and the New York City Opera Co. performs Kurt Weill’s Street Scene on October 27. Check local PBS listings for exact times in your area.
Speaking of Music...

By William Anderson

S carcely a week goes by lately that does not bring news of some fresh development, actual or merely impending, in the videodisc area. RCA, whose corporate style has been aptly characterized as Ambush in the videodisc sweepstakes—the introduction of the Magnavision player last December—and is now awaiting the most propitious moment to attack with its competing SelectaVision system.

The SelectaVision crew has meanwhile been busy fattening the potential software catalog with additions both secular and sacred (see this month's "Bulletin"). I cannot see that any of these are of either original or, indeed, musical material. That, it seems to me, is a serious tactical error: a brand-new entertainment medium can hardly hope to create a brand-new audience when she heads across the stage to take her party in secondhand clothes. Old movies and old TV shows doubtless have their place in the video catalog, but it can hardly be an exclusive or even a first place when many of these same shows (or their re-run counterparts) can be seen almost nightly on free TV. Music of all kinds is notoriously ill-served on the tube, but has no one given any thought to what it is that twentieth-century man expects when he puts a disc on a turntable? A disc catalog without music would seem to be almost a contradiction in terms, can it be that the planning for this new medium is being left entirely in the hands of those who know only music-starved TV?

Some of these thoughts inevitably ran through my mind during several Mostly Mozart concerts this summer at New York's Avery Fisher Hall. The performances were almost all by artists already familiar to me—are great. The reason, I think, is Presence, the unwilled projection of a powerful musical personality whose effect is something of a mystery even to its possessor. But, mystery or no, wouldn't you think that, now that there's a possibility at last of capturing some of that crowd-pleasing magic on videodisc, the recording studios would be busy doing it?
SANSUI SELECT SYSTEMS
Now it’s easy to buy great hi-fi.

Until now, buying a fine audio system hasn’t been easy. You had to learn about components. And take time to match them for looks and for sound.

Sansui has changed all that.

Our expert engineers have used advanced Sansui technologies to produce a new series of Select Systems that give you purest high fidelity with minimum fuss.

In our Select System 70, great sound starts with the new R-70 receiver, as versatile as it’s easy to use. You can listen to one music source at the same time as you’re taping something else. The bright and precise LED displays help you find your station quickly, and monitor both signal strength and output power. The DC-Servo amplifier section delivers lots of power, virtually without distortion. And radio reception of even the weakest stations is superb.

Sansui’s new direct-drive automatic FR-D3 turntable tracks your records with unusual precision, and its controls are conveniently outside the dustcover. The Dolbyized D-90 cassette deck, a convenient front-loader, has bias and EQ switches to match standard and high performance tapes. And when you connect it to a timer, it’ll make recordings while you’re away.

To deliver the music, we’ve provided a pair of our fine 3-way acoustic suspension SPA-3700 speakers, with great power and clarity over the entire frequency spectrum and special controls to match the sound to your listening environment.

Everything (except the speakers, of course) is conveniently mounted in a handsome walnut veneer cabinet with smoked glass doors, and plenty of room for your records.

Ask your Sansui authorized dealer to show you the Select System 70 and the other fine Systems, turntables and speakers in the Select line.

When your friends listen to the great sound of your Sansui Select System, they’ll wonder how you did it. Tell them it was easy — with a little help from another friend. Sansui.

SELECT SYSTEM 70

SANSUI ELECTRONICS CORP.
Lyndhurst, New Jersey 07071 • Gardenia, Ca 90247
Sansui Electric Co. Ltd., Tokyo, Japan
Sansui Audio Europe S.A., Antwerp, Belgium
In Canada: Electronic Distributors

CIRCLE NO. 50 ON READER SERVICE CARD
Better than belt.

Better than direct.

What's better than belt and direct drive? The best of both in one turntable. The specs of direct drive with the acoustic and mechanical isolation of a belt drive. Until now, unheard of. But now you can hear it all on Philips' exclusive, new Direct Control turntables.

How did Philips do it? The way you'd expect a worldwide leader in electronics to do it - with the world's best electronic technology.

**PHILIPS' EXCLUSIVE DIRECT CONTROL ELECTRONIC DRIVE SYSTEM.**

In all Philips Direct Control turntables a mini-computer at the driving disc constantly checks and re-checks the platter speed. Instantly correcting for any variations in line voltage, frequency, pressure on the platter, temperature - even belt slippage. That's how all Philips Direct Control turntables keep the speed constant and accurate.

A 160 pole tacho generator (A) at the driving disc (B) electronically monitors the platter's (C) rate of rotation. The tachometer's d.c. signal is continuously compared to a stable d.c. reference signal. Any variations (+ or -) and the tachometer (A) instantly accelerates or slows the separate d.c. motor (D). Direct Control actually puts the driving disc into the electronic feedback loop for excellent speed stability.

**DIRECT CONTROL FREE-FLOATING SUBCHASSIS.** Specially designed to give Philips Direct Control turntables superb acoustic and mechanical isolation. To cushion the platter, the tonearm - and protect your valuable records - from unexpected jolts, shocks and knocks. And to keep the rumble remarkably low.

**DIRECT CONTROL = TOTAL TURN-TABLE DESIGN.** But Philips doesn't stop there. For us Direct Control is more than an exclusive new drive and suspension system - it's a completely new concept in total turntable design. Direct Control is specially designed straight, low mass, tubular aluminum tonearms, with very low friction bearings. To track even your most warped records accurately.

**DIRECT CONTROL ELECTRONIC FEATURES.** Direct Control means reliable electronic touch switches for silent, vibration-free operation. Accurate electronic pitch controls. Digital and LED indicators to monitor platter speed and identify functions. And photo-electronic sensors to initiate the automatic tonearm return.

CIRCLE NO 52 ON READER SERVICE CARD
DIRECT CONTROL RECORD PROTECTION. Philips even built in an accurate stylus pressure gauge, to keep the pressure off your valuable record collection. Nobody ever thought of that before. But Philips thinks of everything.

ALL AT A PRICE THAT'S WELL UNDER CONTROL. Philips’ exclusive Direct Control turntables—the new state-of-the-art—from $160 to $250. With Quartz Control, $400.

By joining our European research facilities with our American know-how, Philips produces a full line of audio equipment high on performance and value. That’s what sets us apart from the competition. Here and around the world.

EVERYONE WHO KNOWS, KNOWS PHILIPS

High Fidelity Laboratories, Ltd.

<table>
<thead>
<tr>
<th>Model</th>
<th>Flutter (%)</th>
<th>Rumble (dB)</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF 877</td>
<td>0.025% (WRMS)</td>
<td>73dB (DIN B)</td>
<td>$299.95*</td>
</tr>
<tr>
<td>AF 877</td>
<td>0.02% (WRMS)</td>
<td>70dB (DIN B)</td>
<td>$249.95*</td>
</tr>
<tr>
<td>AF 877</td>
<td>0.01% (WRMS)</td>
<td>65dB (DIN B)</td>
<td>$219.95*</td>
</tr>
<tr>
<td>AF 877</td>
<td>0.005% (WRMS)</td>
<td>65dB (DIN B)</td>
<td>$189.95*</td>
</tr>
<tr>
<td>AF 877</td>
<td>0.005% (WRMS)</td>
<td>65dB (DIN B)</td>
<td>$159.95*</td>
</tr>
</tbody>
</table>

*Suggested retail prices optional with dealers.
The speaker shown above is the New Advent Loudspeaker—a new version of the system that has been this country's best-selling and most imitated speaker for several years.

If you have been thinking of getting, or improving on, a stereo system, the New Advent Loudspeaker can give you performance that's clearly in the "best" category for the price you would normally pay for "something pretty good." Its price is $155 to $190* depending on cabinet finish and how far we have shipped it.

For full information, including a list of Advent dealers, please send us this coupon at the address below. Or call (toll-free) 800-225-1035. (In Massachusetts, the non-free number is 617-661-9500.) Thank you.

Name
Address
City
State Zip

Advent Corporation
195 Albany Street, Cambridge, MA 02139

*Suggested prices, subject to change without notice.

LETTERS TO THE EDITOR

Minispeakers

- Stereo Review's listening report on nineteen minispeakers in August was right on target; it zeroed in on the most important aspect of these products, namely, how they sound. Conventional tests and reports with charts, graphs, etc. may be nice for engineers who are designing speakers, but we listeners need precise details about sound and music reproduction. The subjective comments along with the background information on the panel of real people (not merely some anonymous collection of "golden ears") allowed us to judge more fully the suitability of each of these units for our own purposes.

Charles M. Edwards
Cherry Hill, N.J.

- My compliments to Stereo Review for the timely and informative August cover story on minispeakers. I bought a pair of ADS 300s a year ago and have been thoroughly pleased with their performance, especially in my car. I cannot stand boomy bass, so I forgave the 300s their lack of very low end. Last December, however, I was drooling through my local audio shop when I heard—and bought—my first subwoofer. The bass end is now very much alive and living in my bedroom; I now have clean bass that will make any organ music shake the walls. The total invested in the system is $600 and the sound I am getting puts most systems costing twice that much to shame. I would encourage everyone to give the satellite/subwoofer systems a listen, because they have the potential to revolutionize the speaker industry.

Steve Schmidt
Escondido, Calif.

Sweeney Todd

- Having thoroughly enjoyed both the opening-night performance and the original-cast recording of Stephen Sondheim's brilliant Sweeney Todd, I take issue with the final paragraph of Paul Kresh's August review. Sondheim is expanding the musical theater, not trying to re-create "the pen of Irving Berlin." And as for "sangible, simple, warmhearted songs," has Mr. Kresh forgotten who penned Send In the Clowns?

Lloyd Kay
Los Angeles, Calif.

Mr. Kresh replies: No; but it was in Sweeney Todd.

Prix de Rome

- William Anderson's August "Speaking of Music . . ." column includes the statement that "[the U.S. has] no Prix de Rome...." What do you think those awards are called that are given out every year to the American Academy in Rome, if not the Prize of Rome? Composer Leo Sowerby won the first, Howard Hanson the second, and since then such major and minor names as Samuel Barber, Roger Sessions, Robert Sanders, Randall Thompson, and friends have enjoyed the prize's privileges. Indeed we have a Prize of Rome, in name and in fact.

Paul Hume
The Washington Post
Washington, D.C.

Mr. Hume replies: Just so, and we thank Mr. Hume for sharing what appears to be a well-kept secret.

(Continued on page 12)
Is it possible to love a fatter tonearm?

Most sleek, graceful tonearms, including Sony's, are lovingly crafted precision instruments.

But even the most expensive beauties have a beast of a problem. Tonearm resonance.

At low frequencies, feedback in the form of noise and wayward harmonics is added to your music. Bach with a tiny tuba in the background. It's called the last big turntable problem. Poof. Sony banished tonearm resonance at any frequency by putting a linear motor in the tonearm. And a linear motor under the tonearm. That's why it's radically fatter and radically better. It's totally electronic.

We call our new tonearm the Biotracer and our new turntable is the PS-B80. It's the highest-fi you can buy for professional applications or critical home listening.

You select the stylus force by dialing an LED readout on the front panel and the microcomputer automatically makes the adjustment. Tracking force can be changed during record play. Antiskating force is automatically and continuously applied by the horizontal linear motor. A sensor relays the tonearm's lateral position to the microcomputer and the selected tracking force is stored in its memory.

The linear torque BSL (Brushless & Slotless) turntable motor delivers an extremely high signal-to-noise ratio and virtually eliminates wow and flutter. The BSL motor in a major design breakthrough has no slots to cause uneven torque distribution.

A highly stable quartz-crystal oscillator and a magmedisc servo-controlled system lock turntable speed for precise platter rotation.

Consider the electronic automation. Record play is automatic. Record size selection is automatic. Repeat and partial repeat are automatic. Even stylus cleaning is automatic.

The new all-electronic Sony PS-B80 redefines the limits of turntable technology. Listen closely. You're going to love it.

PS-B80
Donna Summer

How is it possible for a reviewer, writing about an album he likes, to overlook completely the best song on it? That’s what happened in Edward Buxbaum’s review in August of Donna Summer’s “Bad Girls.” I was in Los Angeles when I first heard cuts from it, along with Hot Stuff and Bad Girls, the song Sunset People was dominating the disco airwaves—and with good reason! Besides being the type of dancing music that will make your blood boil and your feet move whether you want them to or not, Sunset People’s combination of lyrics and music comes close to capturing the essence of the Strip on a weekend night. I say “close” only because the lyrics should have been developed a little more, but compared with most other disco songs, this one is a milestone.

Joseph A. Tolianic
Evergreen Park, Ill.

NAD Modifications

Julian Hirsch pointed out some minor weaknesses in performance in his extremely favorable July review of the NAD 3020 integrated amplifier. We at NAD agree with his comments and have introduced the following modifications in the component: (1) the soldered internal speaker fuse has been replaced by an automatic-reset thermal relay that will permit high-level music to be played into 2-ohm loads but will cut out on continuous sine-wave testing into loads of less than 3 ohms, (2) the operating temperature of the unit under heavy load conditions has been reduced by 15 to 20 per cent by using a new cover with increased ventilation area, and (3) the phono-preamplifier overload point at 20,000 Hz has been increased from 1,500 to 2,700 millivolts.

In addition, we would like to point out an important aspect of the amplifier’s “soft-clipping” action that is not shown in Mr. Hirsch’s spectrograms printed with the report. Although the change in the higher-order harmonics is seen (and it is worth keeping in mind that 0.1 per cent of a spurious tenth or eleventh harmonic sounds as objectionable as 3 per cent of a second harmonic when the fundamental is in the 20- to 50-Hz range), the resolution of the spectrum analyzer is not good enough to show the elimination of numerous intermodulation sidebands caused by ripple modulation at 120 Hz and its harmonics. These sidebands, which give rise to a particularly objectionable buzzing sound, are completely removed by the soft clipping, contributing greatly to the circuit’s effectiveness.

B. Erik Edvardsen
Director of Research, NAD International
London, England

Prudish Reviewer?

Peter Reilly should get an award as “Prude of the Year,” not for his June review of Frank Zappa’s “Sheik Yerbouti” but for his complaint about the album cover in the last paragraph of his August “Best of the Month” review of Hubert Laws’ “Land of Passion.” I have read with interest many of Mr. Reilly’s reviews and share his opinion of this exquisite work by Laws, so it is beyond my comprehension how he could be so prudishly narrowminded and Victorian in his attitudes. Because an LP with an erotic theme has a photo of a flower that looks (in a vague way) like human genitalia I should hide it from my children? Why, for pity’s sake! I am not ashamed of my body and its sexual parts, and I do not wish my children to be of theirs.

Gale Titus
Round Lake Heights, Ill.

Mr. Reilly replies: The line between innocent physiology and smirking prurience is a thin one, and the designer of the “Land of Passion” album cover has, in my judgment, stepped over it.

Disco Barbra

Edward Buxbaum asks (rhetorically?) “can Streisand be far behind?” in his August review of Donna Summer’s “Bad Girls” album. He need listen no further than Love Breakdown on Barbra’s “Songbird” effort from last year. Let’s not even discuss the title song from The Main Event or the (vicious, I hope) rumor that Streisand will record with the Bee Gees. Taken together, it all goes to prove that not only is Streisand not far behind, she’s running well with the pack—much, I might add, to my chagrin.

Richard D. Simms
Lexington, Ky.

(Continued on page 14)
Psst. Want a hot tip?

Think for a moment about the single most important element between your record and your ears. The cartridge.

Too often it's the forgotten component even in expensive component stereo systems. That's sad.

A low-fi cartridge not only robs you of your stereo investment, it steals part of every record you buy, usually the "presence" and "definition" of the original recording.

Sony would like to recommend a sure thing. The Sony XL-55 Pro moving coil cartridge.

It's a highly original cartridge proved by exacting studio tests and critical home listening trials. And it passes examination without flying colors. Sound is colorless, clean and marvelously transparent. Even the highest-frequency pianissimo soars the way it was originally recorded.

The moving coil cartridge, as compared with the moving magnet type of cartridge, uses a direct voltage generating system that obtains superior sound with extremely low distortion. Output voltage is very low and either a head amplifier or step-up transformer must be used. Sony's HA-55 Head Amplifier offers extremely low-noise amplification for all kinds of MC (Moving Coil) cartridges.

Sony's unique method of generating voltage in our XL-55 Pro is based on a simple figure-8 coil. Output is double that of conventional round coils.

To harness resonance, we adopted an extremely intricate three-layer cantilever mechanism. Tracking is sure and precise. The Sony XL-55 Pro MC cartridge.

Remember the component the others forget.

---

**Specifications**

<table>
<thead>
<tr>
<th>Type</th>
<th>Moving-coil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output voltage</td>
<td>0.2mV</td>
</tr>
<tr>
<td>Frequency response</td>
<td>NAB (kHz, 5cm sec, 45°)</td>
</tr>
<tr>
<td>Channel separation</td>
<td>More than 30dB (kHz)</td>
</tr>
<tr>
<td>Channel balance</td>
<td>Less than 1dB (kHz)</td>
</tr>
<tr>
<td>DC resistance</td>
<td>40Ω</td>
</tr>
<tr>
<td>Impedance</td>
<td>More than 40Ω</td>
</tr>
<tr>
<td>Compliance</td>
<td>15x (g/Hz/µm)</td>
</tr>
<tr>
<td>Tracking force</td>
<td>1.5 - 2.5g (recommended value 2.0g)</td>
</tr>
<tr>
<td>Type of stylus</td>
<td>Elliptical (0.3x0.8mm), Nude diamond</td>
</tr>
<tr>
<td>Weight</td>
<td>22g (including the shell)</td>
</tr>
</tbody>
</table>

Design and specifications subject to change without notice.

---

SONY
CIRCLE NO. 59 ON READER SERVICE CARD
Seventies Requiem

- Hats off to Noel Coppage for perfectly expressing this nineteen-year-old’s thoughts on popular music in his July “Requiem for the Seventies.” After being weaned on such music as the Allman Brothers’ “Eat a Peach” and Traffic’s “Low Spark of the High-heeled Boys,” I find most “creations” by current rock “artists” uninspired and bogus. Like Mr. Coppage, I am patient. So, until our music is again played from the head and the heart instead of from the back pocket, I’ll just keep wearing down the vinyl on my copy of “Close to the Edge.”

RICHARD MARSHALL
Stanhope, N.J.

Gold Records

- Barbara Jurin’s “How to Strike Gold” (July) was interesting and obviously well researched. However, in my opinion the “bible” on the subject of gold records is The Book of Golden Discs by Joseph Murrells. According to Jurin, not one 45-rpm single was awarded a gold record in 1960, but according to Murrells no fewer than ninety releases in that year went gold, including such chestnuts as Greenfields by the Brothers Four, Chain gang by Sam Cooke, Summer Place Theme by Percy Faith’s Orchestra, and North to Alaska by Johnny Horton, seven Elvis hits, stuff by Mantovani, Perry Como, Anita Bryant (!), Percy Faith’s Orchestra, and dozens more, plus that little ditty that was on everyone’s lips, Itsy Bitsy, Teeny Weeny, Yellow Polka Dot Bikini.

BARRY J. HOOD
Oakville, Ontario

- I thoroughly enjoyed Barbara Jurin’s “How to Strike Gold” in July. The material was wittily presented and, at least after 1958, accurate by RIAA standards. However, the historical section of the article, dealing with the first million sellers, repeats many myths and perpetuates inaccuracies that should be cleared up once and for all. For example, Caruso’s “Vesti la giubba” sold a million copies not in one recording but in at least three different ones. At Jolson’s Ragging the Baby to Sleep is one of his rarest records and sold less than 200,000 copies. Bessie Smith’s Down Hearted Blues sold precisely 277,000 copies (this can be verified by the files at Columbia Records), nowhere near a million. Even the idea of a gold record predates RCA’s presentation of one to Glenn Miller in 1942. In 1933 the Gramophone Co. of England gave one to Feodor Chaliapin—admittedly not specifically for sales of one million, but for their thirty years of association. These inaccuracies in Ms. Jurin’s article appear to be drawn from Joseph Murrells’ The Book of Golden Discs, which is unfortunately replete with errors.

JILL KAUFMAN
Press and Artist Relations Manager
Deutsche Grammophon
New York, N.Y.

Ultimatum

- If Tonio K’s “Life in the Foodchain” isn’t the album of the year, then I’m withdrawing from this funky Western civilization.

ROBERT PANNONE
West Haven, Conn.

Correction

- We appreciate the very complimentary review of Music for a While’s 1750 Arch album “La Fontaine Amoureuse” (July “Best of the Month,” page 73). However, the catalog number of the record is S-1773 and not S-1772 as given in the review.

Thank you for your continuing support of the activities of independent record labels.

PHILL SAWYER
Executive Director, 1750 Arch Records
Berkeley, Calif.

IF YOUR DEALER CAN’T DEMONSTRATE DAHLQUISTS...

YOU MAY BE LISTENING TO THE WRONG PEOPLE.

Too many dealers attract customers based solely on their ability to deliver the best price.

At Dahlquist, we choose our dealers based on their ability to deliver the best sound.

The difference is the distinction between price and value... between giving you more money off, or more for your money.

At Dahlquist, all our products are designed to deliver the absolute maximum performance for their cost.

By carrying our products, Dahlquist dealers are demonstrating their support for this approach to audio.

People like this may be few and far between, but they are worth looking for.

And listening to.

FOR A LIST CONTAINING OUR DEALER NEAREST YOU, PLEASE WRITE TO: DAHLQUIST INC., 601 OLD WILLETS PATH, HAUPPAUGE, NEW YORK 11789

CIRCLE NO. 17 ON READER SERVICE CARD

STEREO REVIEW
Now a car stereo that can fix flats and sharps.
Panasonic Component Systems II™ with graphic equalizer.

Music from some car stereos can sound like a retread of the original. Because with most car stereos you can't fix the bass without affecting the treble. Or fix the treble without affecting the bass. Add these problems to the problems your car's interior creates and you have an acoustic condition hazardous to your music.

Panasonic Component Systems II solves the problem with a 5-band graphic equalizer.

The Panasonic graphic equalizer, CJ-3600, gives you 5 separate tone controls. That's one bass and treble control for every two musical octaves. So you can change the music that sounds too flat or too sharp. And the graphic equalizer is also a power booster, giving you 30 watts of total power. So you'll have both the power and control to steer clear of the many musical bumps caused by your car's interior.

And there's a lot more to Panasonic Component Systems II. There's a stereo cassette player with auto-reverse, the CX-7200. It has a built-in 2-stage preamp and dual channel power amp for clean stereo separation. And a sensitive AM/FM stereo tuner, the CA-9600, with AFC plus local/DX and auto-stereo/mono switches. They're all designed to fit neatly under your dash.

The Panasonic Component Systems II. Also available with repeat track cassette or 8-track. They'll give your ears one of the smoothest rides they ever had.

Panasonic just slightly ahead of our time.
The era of metal particle tape has arrived. Metal-ready cassette decks are already in the stores, and more are on their way. There are also a number of metal cassettes on the market, and all of them have a high coercivity and remanence—their magnetic energy is roughly four times that of the best oxide tapes. But that does not mean that all metal cassettes are alike. Not by a long shot.

TDK's metal cassette, MA-R, looks, feels and performs like no other cassette. That's why we call it "The Music Mirror." We've used advanced manufacturing technology to solve the problems inherent in metal tape. If left untreated, metal particles oxidize upon contact with water vapor and oxygen in the atmosphere—they actually "rust." TDK has developed a unique way to coat each and every particle with a process that protects them from the atmosphere, even at the critical exposed edge of the tape. The result is a tape that is resistant to oxidation. In fact, the overall stability of MA-R is well within the limits that have been set for conventional cassettes. But superior tape is only part of MA-R's story. TDK's new Reference Standard Mechanism is so revolutionary in design and performance, that its influence will be felt for years to come.

For starters, there's the one-piece, die-cast metal main-frame. Metal is far more resistant to warpage than plastic, and unibody construction eliminates performance differences between the A and B sides. The frame and mechanism are sandwiched between two clear covers held in place by six computer-torqued, double-threaded locking screws that will not slip because of vibration.

MA-R's amazing mechanism is visible for all to see, thanks to a transparent slip sheet. Our unique double hub-clamp is an integral part of a strong and circular tape storage system. (MA-R's two clamps are color-coded red and black, as a visual reference).

Our newly-designed, seamless, water-wheel-type rollers rotate around stainless steel pins, which are micro-polished for circularity. Our new dual-spring pressure pad assembly allows for more flexibility, yet provides more horizontal support for uniform tape to head contact. MA-R even includes removable, replaceable erase-prevention lugs, a new standard in protection and flexibility.

Ask your TDK dealer to show you the new MA-R cassette. Hold it in your hands and feel its weight. Look at the ingenuity and precision of the shell and mechanism. Then listen to it perform in one of the new metal decks. All your senses will tell you that this isn't just another new cassette—it's one of the memorable audio products of our time.

TDK Electronics Corp., Garden City, N.Y. 11530.

© 1979 TDK Electronics Corp.

CIRCLE NO. 65 ON READER SERVICE CARD
Conductive-foam Turntable Mat Reduces Static

The Charleswater Staffree record mat is a lightweight, electrically conductive foam cushion that neutralizes record-borne static electricity. Surface electrical resistance, according to Charleswater, is less than 30,000 ohms per square inch. Thickness is 1/16 inch and weight is approximately 1/2 ounce. Price: $4.95. For more information write to Charleswater Products, Dept. SR, 87 Crescent Street, Needham, Mass. 02194.

Medium-price AM/FM Receiver From Marantz

The Marantz SR-6000 AM/FM receiver has a power output of 70 watts per channel into 8-ohm loads with a total-harmonic-distortion rating of 0.025 per cent or less. It is capable of putting out 88 watts per channel into a 4-ohm load (with total harmonic distortion of 0.05 per cent or less)—an important characteristic, according to Marantz, because most loudspeakers have an impedance well below 8 ohms at some frequencies. Intermodulation distortion is 0.025 per cent or less at 8 ohms and 0.05 per cent or less at 4 ohms.

Controls and features include LED power-output meters, three tone controls, a separate record-mode knob that permits the user to record one source while listening to another, FM muting, tape-copying facilities, and the proprietary Marantz Gyro-touch tuning wheel. The tuner section of the receiver has a phase-locked-loop multiplex-decoder section and a front-end gain section that employs MOS field-effect transistors for low noise. Usable sensitivity is 1.7 microvolts (9.8 dBf), and sensitivity for 50-dB quieting in stereo is 35 microvolts (36.1 dBf). Harmonic distortion in stereo is 0.2 per cent or less at 1,000 Hz, capture ratio is 1 dB, and alternate-channel selectivity is 65 dB. Ultimate signal-to-noise ratio is 72 dB.

The preamplifier section of the SR-6000 has a phono section with an A-weighted signal-to-noise ratio of 90 dB, RIAA equalization accuracy to within ±0.2 dB, and an overload point (at 1,000 Hz) of 225 millivolts. The receiver’s power amplifier is fully d.c. coupled. Dimensions of the receiver, which is supplied with a walnut-grain vinyl-covered cabinet, are 18¾ x 11¾ x 13¾ inches; weight is approximately 21¾ pounds. Price: $550.

Direct/Reflecting Autosound System From Bose

The Bose 1401 is an automotive sound system that includes a booster-amplifier/equalizer combination and either two or four full-range speakers; it is designed to provide a combination of direct and reflected sound, as do the Bose home loudspeakers. The amplifier section, which can be driven by any car program source, contains four separate power (Continued overleaf)
amplifiers, each capable of a 25-watt output. Frequency response is specified as 40 to 17,000 Hz and typical total harmonic distortion as 0.09 per cent. Slide controls for power, balance between front and rear speaker pairs, and low-frequency boost are on the front panel. A rear-panel switch can be used to boost treble as a means of compensating for exceptionally absorbent automotive interiors. Dimensions of the amplifier are 10 x 4 1/2 x 1 1/2 inches; a bracket for under-dash mounting is included.

The two rear loudspeakers supplied with the 1401 system are 4 1/2-inch units with steel-mesh grilles; the grilles are designed to angle much of the speaker output upward and to the rear, where it will be reflected from the rear window to the listener. The optional front door-mounting speakers are also 4 1/2-inch full-range units; their entire output is direct. The rear speakers will mount in 6 x 9- or 5 x 7-inch holes. Price of the system with two speakers is $229.95; accessory front speakers with grilles are $69.95 per pair. For more information, write to Bose, Dept. SR, 100 The Mountain Road, Framingham, Mass. 01701.

The Technics SP-15 is a three-speed (33 1/3, 45, and 78 rpm) "armless" turntable that uses a quartz-controlled direct-drive motor of unusually high torque and speed accuracy. The turntable’s speed is variable in 0.1 per cent increments over a range of ±9.9 per cent. It comes up to speed in 0.4 second and brakes to a complete stop, with the assistance of electronic and mechanical braking systems, in a similar length of time. Wow and flutter of the system is 0.08 per cent or less (weighted rms) and rumble is -56 dB, measured using the DIN B standard.

The underside of the turntable platter and the cast-aluminum base have extensive antiresonant matting attached to them—rubber for the platter and a proprietary substance (TNRC—Technics Non Resonant Compound) for the base. These materials are said to reduce acoustic feedback and to eliminate resonances and ringing within the platter and in the disc itself. Controls on the SP-15 include pushbuttons for the three speeds, a start-stop switch, and two digital displays, one for speed, the other for percentage of change of pitch. Two accessory outer mounting bases are available: the SH-15B2, a heavy rubber base covered with a rosewood veneer, and the SH-15B3, a rubber base in a matte black finish. Dimensions of the SP-15 are approximately 14 1/4 x 3 3/4 x 13 3/4 inches (not including outer mounting base). Prices: SP-15, $600; SH-15B2 and SH-15B3, $250.

Vector Research’s New Three-head Cassette Deck

Vector Research, a newly formed California company, has introduced three receivers and three cassette decks. Their top-of-the-line cassette machine is the VCX-600, a three-head, solenoid-controlled unit capable of recording and playing back pure-metal tapes. The deck has a programmable music-search function which, when engaged, searches out and plays a sequence of musical selections chosen by the user (the selections must be separated by brief silent spaces). Peak-reading bar-graph level indicators, controls for memory, auto-rewind, record-mute, and cue-and-review functions, and three-position separate bias and equalization switches (with a ±10 per cent variable bias control) are also found on the front panel.

The transport of the VCX-600 has two motors: a servo-controlled tape-hub motor and a frequency-governed d.c. motor for the capstan. Both the record and playback heads are of Sendust construction; the erase head is ferrous. Specifications of the deck include a frequency response of 30 to 20,000 Hz with pure-metal tape, 30 to 18,000 Hz with cobalt-treated or chromium-dioxide tapes, and 30 to 16,000 Hz with ferric tapes. Signal-to-noise ratio with the Dolby system in use is 65 dB. Weighted wow and flutter is 0.06 per cent rms, and rewind speed is 90 seconds for a C-60 cassette. Dimensions of the VCX-600 are 17 13/16 x 5 5/8 x 14 3/4 inches. Price: $575. For more information write to Vector Research, Dept. SR, 20600 Nordhoff Street, Chatsworth, Calif. 91311.

(Continued on page 20)
TIME LIFE VIDEO
presents:
A $12 videocassette bargain to bring you a great new idea in home entertainment:

Why would TIME LIFE VIDEO sell a new top-of-the-line name brand two-to-four hour videocassette for just $12 or 40% off the suggested retail price?

Because we want to use a small portion of the cassette (which you can, of course, erase later) to present a message so exciting that we thought a videocassette recording was a great way to bring it to life.

We want to tell you how you can gain access to the finest, most comprehensive library of videocassette programs ever assembled.

So fill out and return the coupon with your $12, stating whether you want your cassette in the BETA or VHS format. Or call the 800 number listed in the coupon.

For just $12, you'll be getting a fantastic videocassette buy, and information about a great new way to save a lot more.

But hurry. This offer expires December 31, 1979.

FREE DUST-PROOF JACKET: Even if you don't want to take advantage of our videocassette bargain, you can get a free, durable dust-proof jacket that fits both BETA and VHS videocassettes. Just fill in the coupon or call the toll-free number.

Call toll-free
800 523-7600 (national) or
800 662-5180 (in Pennsylvania),
and ask for operator number 102.
Or fill out and return this coupon to:

TIME LIFE VIDEO
Harrisburg, Pa. 17105

Please send me the two-to-four hour cassette containing your brief message and the free videocassette dust-proof jacket.
My VCR is (check one) BETA □ VHS □.
Check method of payment:
□ Enclosed is my check or money order for $12 plus local tax (if applicable). □
□ Charge my credit card $12, plus local tax (if applicable). □
American Express □ Diners Club □
VISA □ Master Charge □
Interbank #

Credit card
exp. date

Signature
date

Name

Address
City State Zip

Free Dust-Proof Videocassette Jacket
□ I do not wish to accept the special two-to-four hour cassette offer, but please send the free dust-proof jacket to the above address. □

Offer expires December 31, 1979, good only in continental U.S. Limit one per customer.
Epicure has introduced a 4½-inch full-range automotive speaker system, the LS 35, designed to be used in conjunction with a rear-deck speaker unit. Epicure notes that ambient-noise levels in a car are usually quite high and that a sound source close to the listener (such as a full-range door-mounted speaker) overcomes ambient noise without requiring extremely high output from the primary rear-deck speakers. The LS 35, which comes with an integral grille, has a ferro-fluid-cooled voice-coil gap. A level-control system, the LCS, permits individual attenuation of left and right front-speaker outputs. Prices: LS 35, $75 per pair, level control included; LCS alone, $40. Epicure Products, Dept. SR, 1 Charles Street, Newburyport, Mass. 01950.

Sony's PS-T25 is a moderately priced fully automatic turntable with a drive motor that does not "cog" (move in discrete increments) because its design is both slotless and brushless. The turntable has a servo-control system called "Magnedisc" to monitor and maintain speed; it employs a sensor that monitors the motion of the platter's outer rim rather than the motor speed, thus accurately reflecting the turntable's actual speed. The variable speed control has a range of ±4 per cent.

The tone arm of the PS-T25 is a J-shape, statically balanced unit with an aluminum arm shaft. A spare head shell is included with the turntable. Controls on the PS-T25 are located at the extreme front of the top panel in an area that is not covered by the dust cover. They may therefore be used while the dust cover is in place. Specifications of the unit include a rumble figure of ~70 dB, measured using the DIN B standard, and a wow-and-flutter figure of 0.04 per cent. Dimensions are 5½ x 17½ x 15½ inches; the tone arm's pivot-to-stylus length is 8½ inches. Price: $170.

Altec Lansing's LF-1 subwoofer has a fixed crossover at 80 Hz and was developed to be compatible with a wide variety of loudspeakers. The sensitivity of the system may be varied over a 9-dB range to match its output to that of the main speakers. The LF-1 uses a single 12-inch driver with a dual voice-coil arrangement that derives a combined left- and right-channel signal from the output of the amplifier. The enclosure, finished in an unusual wood veneer called Endriana, has dimensions of 36 x 36 x 18 inches. The speaker radiates downward and the enclosure incorporates its own lower panel, thus preventing variations in response that might be caused by different floor materials. It is mounted on nickel-steel legs. Approximate price: $500.

A second similarly styled system, the LE-2, has selectable crossover frequencies of 80, 60, and 40 Hz and includes its own equalized outboard amplifier for greater dynamic range. Approximate price: $800.
We can. Thanks to the revolutionary Omni-Pivot System™ in our new ADC Improved Series cartridges. We can also honestly say ADC has never sounded better. Definition and stereo separation are incredible. Even the most complex musical passages are reproduced in full detail with absolute neutrality.

The new Omni-Pivot System™ is a major advance in micro-technology. There are no restrictive armature governors, wires or adhesives. Instead, each armature is micro-machined to perfectly lock into a newly formulated S-9 high definition suspension block. We think it's a real breakthrough. But we'd like you to be the judge.

Above is the frequency response of a new ADC ZLM Improved cartridge. The wider and flatter the response, the better it is. Do we have to state the obvious? We didn't think so.

Now look at the same cartridge after 1000 playing hours. See any difference? You won't hear any difference either. The ADC ZLM Improved cartridge showed less than a 1dB change in response after 1000 hours!

Now the good news gets even better. The Omni-Pivot System™ comes in a wide range of new ADC Improved Series cartridges. The ZLM, XLM MKIII and MKII, and QLM-36 MKIII. All featuring new snap-down stylus protectors.

If you already own a fine ADC cartridge, the Omni-Pivot System™ is yours for just the price of a replacement stylus.

Listen to any new ADC Improved cartridge. After you've heard us, we'd like to hear from you. Write Audio Dynamics Corp., Pickett District Rd., New Milford, Ct. 06776, or call our toll-free number (800) 243-9544.
discount music club, inc

a different kind of record club

You can own every record or tape that you may ever want...at tremendous savings and with no continuing purchase obligations. You can get valuable free dividend certificates, you can get quick service and all the 100% iron-clad guarantees you want.

Now you can stop price increases that leave you with less music for your record and tape budget. You can guarantee yourself more music for less money through membership in Discount Music Club.

Look at these benefits:

TREMENDOUS SAVINGS on every record or tape in print—no "agree-to-purchase" obligations of any kind.

DISCOUNTS OF 43% TO 73% off mfg. suggested list...special catalog features hundreds of titles and artists.

ALL LABELS AVAILABLE including most imports through special custom ordering service. If we don't stock it we'll get it for you.

SCHWANN CATALOG lists thousands of titles; classical, pop, jazz, ballet, opera, musical shows, folk, rock, vocal, instrumental, country, etc.

DISCOUNT DIVIDEND CERTIFICATES Dividend Gifts—Every shipment carries a dividend gift or dividend certificate. Certificates redeemable immediately for extra discounts.

NEWSLETTERS happenings in the world of music; concerts, critiques, new releases...special super-sale listings at discounts of up to 73%.

DISCOUNT ACCESSORY GUIDE Diamond needles, cloths, tape cleaners, etc. Discount Music Club is your complete one stop music and accessory buying service.

QUICK SERVICE same day shipping on many orders...rarely later than the next several days. Partial shipments always made in the event of unforeseen delay...all at no extra cost to you.

100% IRON-CLAD GUARANTEES on all products and services. Everything is guaranteed factory fresh and free of defects or damages of any sort—Your total satisfaction is unconditionally guaranteed.

Discount Music Club is a no-obligation membership club that guarantees tremendous discounts on all stereo records and tapes and lets you buy what you want...when you want...or not at all if you choose.

These are just a few of the money-saving reasons to write for free details. You can't lose so why not fill out and mail the coupon below for immediate information.

discount music club, inc
9-1079
main street, new rochelle, n. y. 10801

circle no. 19 on reader service card

new products
latest audio equipment and accessories

Audio Control's Ten-band Equalizer/Spectrum Analyzer

Audio Control has introduced the C-101, one of the few examples of a new component category called the "equanalyzer." The C-101 combines the functions of a real-time frequency-spectrum analyzer and an octave-band graphic equalizer.

The spectrum-analyzer section continuously monitors the level of each of ten octave-wide frequency bands and displays an illuminated graph of the frequency response of a system or individual component at any given moment on a screen composed of about one hundred LED's. (The term "real-time" indicates that the instrument is simultaneously measuring and displaying changes in level and frequency response as they occur, rather than examining only one range of frequencies at a time and storing the information to derive a complete display.) The analyzer can be used to determine the frequency response and output level of almost any component, including those with line-level outputs (such as tape recorders), speaker-level outputs (such as power amplifiers), or, using an external microphone, components whose output is acoustic rather than electrical (such as loudspeakers).

The analyzer contains a pink-noise generator that can be used as a system-input test-signal source; however, the unit will also display the instantaneous levels and frequency response of a signal composed of other types of test tones or of music. Sound-pressure-level readings can also be made. The speed of response of the display may be set to either slow or fast positions, depending on the degree of smoothing of the visual signal desired. The LED display can also be set to show either a 2- or a 4-db change in level per LED, yielding either an 18- or a 36-db dynamic range on the display.

The C-101 also contains a ten-band graphic equalizer that permits ±5 dB of level adjustment at 32, 60, 120, 240, 480, 960, 1,920, 3,840, 7,680, and 15,500 Hz (these are also the center frequencies of the analyzer bands). Left- and right-channel controls for each frequency band are grouped together for ease of simultaneous adjustment. The equalizer section has a switchable infrasonic filter that attenuates at 18 db per octave below about 25 Hz, and a circuit that blends both channels below 200 Hz, thereby canceling vertical phono rumble or other disc-noise components. Specifications include a total-harmonic-distortion rating for the equalizer of less than 0.025 percent, frequency response of 3 Hz to 100 kHz ±0.75 dB, a signal-to-noise ratio for the equalizer of 96 dB below 1 volt, and a maximum output level of 7 volts. The pink-noise generator of the unit puts out 100 millivolts and can be connected directly to an amplifier's auxiliary input.

Audio Control notes that a wide variety of operations useful to both the audiophile and the technician can be performed with the C-101: optimization of tape-recorder bias and equalization; determination of speaker, preamplifier, and tape-recorder frequency response; spectrum analysis of room acoustics; determination of sound-pressure levels; and measurement of speaker efficiencies. Dimensions of the rack-mounting unit are 19 x 135 x 6 1/2 inches and weight is 7 1/2 pounds. Price: $549. For further information, write to Audio Control, Dept. SR, 6520 212th Street SW, Lynnwood, Wash. 98036.

MOSFETs in SBE Equinox Auto Power Amplifiers

The Equinox 100V and 150V (shown) are automotive power amplifiers that use MOS field-effect transistors in their power-output stages. The 100V has a power output of 50 watts per channel; the 150V has 75 watts per channel. Both units have harmonic-distortion specifications of 0.2 percent at rated power, a frequency response of 20 to 20,000 Hz (-1 db), and an input sensitivity of 1 volt. Each has a number of indicator lights that report on the status of the power-supply circuit breakers, the unit's temperature, and other conditions. Prices: 100V, $349.95; 150V, $399.95. Write to SBE, Dept. SR, 220 Airport Boulevard, Watsonville, Calif. 95076.

notice: All product descriptions and specifications quoted in these columns are based on materials supplied by the manufacturers. Domestic inflation and fluctuations in the value of the dollar overseas affect the price of merchandise imported into this country. Therefore, please be aware that the prices quoted in this issue are subject to change.

Stereo Review
How to select a sound system for your car, boat or plane.
Audiovox candidly reveals what you should look for, listen to and beware of.

By Robert Harris, Technical Director

You are confronted by everything from $50 AM radios to $1,000 high fidelity systems. Where should you shop? How much do you really need to spend? Read on as Audiovox throws some light on the subject.

Audiovox aims to provide American motorists with a level of sound reproduction previously attained only in the home - through a range of more than 139 systems and components.

Where to buy.
Manufacturers with a limited range of products need to sell all of their products to all types of stores.
Audiovox, on the other hand, markets 3 totally different product groups. The regular group - providing superior sound reproduction at a reasonable price and available through conventional retailers, chain stores, and catalogs; the S.P.S. (Special Performance Series) featuring original equipment styling and features - available only from new car dealers; and the Hi-Comp group - a complete line of “state of the art” components, available through car stereo specialists.

How much good sound should cost these days.
You can pick up a basic AM radio for about $50. The average cassette or cartridge player with built-in AM/FM radio and two good speakers will cost about $150. And if you want to shoot the works, Audiovox builds an electronically-tuned receiver/cassette player with auto-reverse, the HC65 speaker system, a 60-watts-per-channel amplifier, plus Dolby®, CrO2 switch, parametric equalizer, etc. for around $950. (Installation charges excluded.)

Speakers – Facts you should know.
As with home hi-fi, speakers are the most important component of a mobile sound system.
The key issue is compatibility. With power out-puts of 60 watts per channel and up, an inappropriate set of speakers will blow out. If you play your Audiovox receiver/amplifier through power-matched Audiovox speakers, the performance of the system will be optimized to the fullest.
Robert Merrill listened to us.

He was formerly a baritone with the New York Metropolitan Opera.

After he heard the System B, a vented 4-way, 5 driver loudspeaker system, this is what he said.

"The sound doesn't come directly at me. It seems to come around me which I enjoy."

That's because we painstakingly designed the System B to achieve maximum dispersion of sound.

Here's how we did it.

First, we symmetrically positioned all four front-firing drivers to improve dispersion over the complete frequency range.

We didn't stop there, either.

The System B has two specially designed, but different high frequency drivers. One on the front and one on the rear.

With the System B positioned 12" from the wall, the supplementary energy from the rear firing driver is deflected off the wall and dispersed throughout the listening area.

That means the music sounds virtually the same whether you're directly in front of the speaker or off to the side.

We've gone to great lengths to minimize distortion, too.

We've carefully selected each crossover frequency to subjugate driver resonance below critical crossover points. That completely eliminates distortion in the crossover regions.

It all adds up to music that is clearly defined and accurate.

But this is just part of the story behind this amazing sound system.

That's why you should go to your Jensen audio dealer for a personal demonstration.

After all, your ears are still the ultimate test.

But here's one more thought about the System B from Robert Merrill, a professional baritone.

"I've often thought that I would like to jump off the stage and hear myself sing. I think if it sounded like this, I'd be very happy...yes, very much."

Listen to our speakers.

Robert Merrill did.

Listen with the professionals.

The graph pictures the polar response characteristics of System Bat 5000 Hz. It shows improved dispersion (shaded area) as a result of the rear firing driver.

Listen to JENSEN speakers.
Stereo Image and Depth

Q. Some audio enthusiasts make a big deal of the differences they hear in "stereo imaging" and "depth" among the various components. What is it all about?

VINCENT PETERS
Staten Island, N.Y.

A. As far as I know, the only factors that can influence the perceived spatial properties of a stereo signal are: (1) accidental or deliberate phase shift between channels, (2) channel separation, (3) difference-signal (L - R and L + R) feed into the opposite channel, (4) frequency-response irregularities, and (5) the ratio of directly perceived versus reflected sound within a room, which is determined by the design and setup of the speakers in interaction with room acoustics. (Also see "Technical Talk" in this issue.)

I asked Tom Holman of Apt Corporation for his thoughts on the matter, and he replied:

"In working with preamplifier design, we have learned that many factors can influence the perceived depth of the stereo image produced by an electronic component. Some of these are clearly understandable in terms of stereo recording and reproduction; others bear a more subtle relationship to the process.

Usually the most dramatic influence on the depth of the stereo image is the type and amount of reverberation in the recording. The sound field embodied in a good classical recording consists of three components picked up by the microphones: the direct sound, early reflections, and reverberation. The direct sound, which is the first heard, is used by the ear to localize the source of the sound. The early reflections contribute a sense of the size of the acoustic space. When the reflections become numerous enough, they are eventually "homogenized" and blend into reverberation, which adds a pleasing sense of warmth and continuity to the sound. (Early Toscanini recordings provide examples of inadequate reverboration, and the result is recordings that are dull-sounding despite the musicality of the performances.)

What I am referring to are the qualities in the recording, not what takes place in the reproduction in a room environment. Since the reverberant element in a recording is usually at a lower level than the direct or earliest sounds, any electronic manipulation of dynamic range may lead to an increase or decrease of the perceived reverberation in the signal. For example, a dynamic-range ex-
If you don't clean and preserve your records with Sound Guard, you're only scratching the surface.

Have you ever considered what it would cost to replace your record collection at today's prices? With that kind of investment at stake, it's no wonder that many music lovers have become more aware of record care. Regular cleaning of your records is important and necessary, but cleaning alone won't prevent them from wearing out.

To protect your investment you need more than cleaning. You need both Sound Guard Cleaner and Sound Guard Preservative.

Sound Guard Record Preservative is a revolutionary dry lubricant which virtually eliminates record wear without affecting the fidelity of the record. And when you drag the hardest substance found in nature—diamond—through the soft, intricate vinyl canyons of a phonograph record at phenomenal rates of acceleration, it doesn't matter how light you're tracking. Something's got to give, and that's the vinyl. But with a Sound Guard-treated record, even after 100 plays, there is no audible degradation of performance.¹

Before and after you preserve your records, be sure to use our superior cleaner to remove the dust and oily films that can further mar performance. (The cleaner will not remove the preservative's protective coating.)

Sound Guard offers the only complete program of record preservation and maintenance. It requires a little more time and effort than just cleaning. But how much did you say it would cost you to replace your record collection?

Sound Guard. Everything else is a lot of noise.

Sound Guard

Sound Guard preservative—Sound Guard™ cleaner.
Sound Guard® Total Record Care System.
Sound Guard is Ball Corporation's registered trademark.

¹ Copyright © Ball Corporation, 1979, Muncie, IN 47302.
Apt Corporation believes there's only one good reason to create a new product: a genuine need. The Apt 1 Amplifier is just such a product. With 3 dB of Dynamic Headroom, it can deliver as much as twice its 100w average rated power (20 Hz-20 kHz @ 0.03% THD) on musical peaks—just as program material so often requires. And, it can deliver this extra performance into any actual loudspeaker, not just on the test bench. The Apt 1 also incorporates new approaches to power supply, driver stage, and protection circuit design, which all contribute to a uniquely useful amplifier.

Real Power for the Real World:
The Apt 1 Amplifier

You don't live in an ideal world—neither does your stereo music system. The Holman Preamp is the result of over 2 man-years of research into how and why components behave in real-world hi-fi systems. As such, it provides an unprecedented balance of features and performance, which combine toward a common goal: sonic excellence.

The Holman Preamp and the Apt 1 Amplifier; individually or together they make music systems work better, and sound better.

For information, check the appropriate box(es) below and send with your name and address to:

Apt Corporation
Box 512
Cambridge, Massachusetts 02139

☐ Apt 1 Amplifier brochure and the name of your local dealer.
☐ Holman Preamp brochure.
☐ For an Apt 1 Owner's Manual, please send $4 ($5 foreign).

CIRCLE NO. 4 ON READER SERVICE CARD

A DECADE IN AUDIO

Almost exactly ten years ago I first sat down at this desk to begin addressing the audio-minded public on matters high fidelity. Long enough ago, surely, for me now to take stock, to measure whether I have achieved the goals I set for myself—to recall, for that matter, what those goals were.

First of all, it was of course my earnest desire to draw a regular paycheck. Second, I wanted to pass on to those who shared my interest in high fidelity the important factors necessary to attaining it (as soon as I learned them myself, that is); in other words, I wished to help educate the world about sound. (I think I can safely say that my triumphs in this endeavor fall somewhere between Napoleon's assault on Russia and Custer's last stand, but at least I was under no illusions from the outset.) Finally, it was my ambition to devise the finest hi-fi system ever heard by man. And what better environment for doing that than STEREO REVIEW, where sound and sound reproduction are all-consuming preoccupations, where many of the most innovative minds in the audio field are accustomed to come with the first word of their latest developments?

You might think, as far as the last goal was concerned, that I'd have been wiser to have gone into investment banking instead, gotten a good head start on my first million, and then written an enormous check to the account of some local hi-fi emporium. And perhaps you're right. But unless happy accident plays a part, the best possible sound still requires more than a large bank account and the courage to use it. Professional sound men strain their clients' budgets to assemble the best and costliest equipment available, and yet they must routinely contend with on-the-spot difficulties that require expertise, experience, and sometimes even inspired intuition.

Did ten years of effort get me the sound system I wanted? In a sense it did; at least there were whole weeks when I was perfectly satisfied—nay, delighted—with everything I heard. But then, as in the case of Napoleon, there would come a time when I'd get inexorably pushed back to the borders of the Marginally Acceptable, sometimes even driven to the frontiers of the Absolutely Insufferable. These setbacks ranged from the introduction of a subtle harshness in the sound (once detected, impossible to ignore) to what is best described as a sense of strain under stress, as when, in addressing a challenging orchestral climax, the system sadly reveals itself as only an electromechanical contrivance rather than a magical eavesdropper on real music.

This Problem of Fitful Satisfaction has, in one or more forms, afflicted all the serious high-fidelity enthusiasts I know. Depending on their expectations and past experiences, they tend to attribute it either to the system (the beginnings of gradual degradation in some part, or even a change in the weather) or to themselves (indigestion, stress, the first symptoms of a brain tumor, or just the keener perceptions of a good ear that has become even better at distinguishing illusion from reality). Their solutions have ranged from the purchase of an entire new system to the scheduling of a long vacation. As for myself, I am one of those who are convinced that there is always a real, identifiable problem, and I set about trying to identify and fix it. These are the things I have most often tried to fix:

(1) The listening room. Were it not for its important role as a container and sustainer of sound, the listening room would have to be considered as nothing more than a stumbling block on the road to audio perfection. Rooms
Why do we make more than one speaker?

Just about everyone who recognizes the name Bose® also knows the Bose® 901® Direct/Reflecting® speaker. They know it as the very unconventional speaker that, soon after its introduction, became internationally the most highly reviewed speaker regardless of size or price. And now, more than 300 design improvements later, it is the standard bearer for the state-of-the-art in our technology.

So why do we manufacture any other speakers? Because we appreciate that not everyone is able to acquire the 901 system as his first investment. And we would like that investment to be in Bose. Toward this end we have adopted a definite design goal for each of our speakers.

Our continuing goal for the 901 is to produce the best speaker regardless of price and our objective for each of our other speakers is to produce the best speaker for its price. We pursue these goals by identifying three price points below the 901 speaker and putting as much of the 901 system technology into each design as the price will allow. Each is a Direct/Reflecting® speaker and each offers a measure of the spaciousness and clarity of sound for which the 901 speaker has become famous.

The Model 501
Direct/Reflecting® speaker is the Bose economy floor-standing speaker. A long excursion 10” acoustic suspension woofer, two tweeters and a control for directing the energy from one of the tweeters combine to provide a speaker of exceptional value.

The Model 301
Direct/Reflecting® bookshelf speaker represents one of our most challenging designs. The object was to provide a clear and spacious musical sound from an enclosure that fits comfortably on a bookshelf. You can imagine our pride when an independent market survey found the 301 to be the best selling speaker in the U.S.A.

Whatever your price range, if you cannot start with the best speaker, you can own a substantial portion of the technology that makes it the best. And you can own a measure of the special performance benefits that only a Bose Direct/Reflecting® speaker can provide.
When TDK's engineers set out to make a video cassette for home use, they started with the tape they developed for professional broadcast use and improved it, so it could stand up to the rigors of four-hour home recording. In any deck, TDK Super Avilyn VHS and Beta cassettes offer performance so superior, that they are ushering in a new era in some video: the age of “high fidelity for the eyes.”

FOUR OF A KIND.

The new AR Vertical™ Speakers

They simply had to happen.

Because when a speaker as spectacular and full of innovation as the AR9 is introduced, it's only a matter of time 'til its most important design features are incorporated into other speakers.

To be brief.

The AR9 presented the concept of an array of vertical mid and highrange drivers to give a very precise stereo image.

This design feature is now part of all AR Vertical Speakers.

The AR9 introduced the AR Acoustic Blanker™ which absorbs reflections from the front of the enclosure and noticeably smooths high end response...another innovation that is now part of all AR Vertical Speakers.

Placing woofers in the side of the enclosure (and thus close to the wall behind the speaker) improves bass response dramatically in the AR9. Side-mounted woofers and newly designed slim enclosures accomplish the same objective in the other AR Vertical Speakers.

Liquid-cooled high end drivers give the AR9 terrific power handling capacity.

All the AR Vertical Speakers share these drivers with minor design variations.

So there you are.

Four of a kind (left to right): The AR92, a three-way system with new 10" woofers at about $300. The AR90, a four-way system with a pair of 10" woofers at about $550 each. The AR9, a four-way system with a pair of 12" woofers about $750. And the AR91 with 12" woofer at about $400 each.

They're the finest expression of AR's continuing pursuit of 'truth in listening.' And they're speakers that are going to change your mind about speakers.

Get the literature and give a listen at your AR dealers. Or write for information to AR. 10 American Drive, Norwood, Mass., 02062.

CIRCLE NO. 1 ON READER SERVICE CARD

OCTOBER 1979
IMPROVING CASSETTE TREBLE RESPONSE

In last month's column I reported on the new Dolby HX system which was unveiled at the Summer Consumer Electronics Show in Chicago. This month I want to describe a rather different handling of the problem of cassette high-frequency limitations: the Tandberg "Dyneq" circuit, introduced at the same show in the company's Model 440A deck.

Let's begin by restating the problem. With the present cassette format, a great deal less energy can be stored on magnetic tape at high frequencies (so-called "short" wavelengths) than at low frequencies ("long" wavelengths). Thus, while at low signal levels (for example, -20 dB) the frequency response of a good deck and tape can be held to within ±2 dB throughout the audible range, if the input-signal level is raised to 0 dB, treble response falls off rapidly above a few kilohertz, dropping even below a -20 dB output level somewhere in the 10,000- to 15,000-Hz range.

An illustration of the extent of this loss is shown in the accompanying graph, in which the precise input-vs-output characteristics for several fixed frequencies are plotted. Given an ideal situation, the output of the tape would increase linearly with recording level, following the dashed diagonal lines shown for each frequency. In the real world of the cassette recorder, however, we find that even at the comparatively low frequency of 333 Hz (the top trace shown), if the input level is raised to +7.5 dB the available maximum output is only +6.5 dB. Thus 1 dB of "compression" occurs at this recording level, and such compression inevitably brings distortion.

As the frequency is raised, the "linear" output capability of the tape is reduced. At 6,300 Hz, the 1-dB compression point occurs at an input level of -4 dB. At 10,000 Hz, a -12-dB input yields 1 dB of compression, and at 15,000 Hz that degree of compression corresponds to an input level of -18.5 dB. The 15,000-Hz graph shows that even if you care nothing about distortion (nonlinearity) and keep raising the recording level indefinitely, there is no way (using normal bias) that this tape will put out more than -19 dB at that frequency. Indeed, higher input levels serve not only to create massive distortion but actually to drive the tape's output down. This, of course, is precisely what happens when cassette recordists hear audible high-frequency saturation. The distortion that is heard does not consist of high-frequency harmonics, for these lie well above the range both of the ear and of the cassette deck. Rather, it consists of intermodulation products formed as the high-frequency harmonics interact with the lower frequencies of the music program.

The distortion—and even the loss in output—caused by trying to record more high-frequency energy on the tape than it can accept is not always (or even usually) the fault of the musical material itself. The real problem is that the high-frequency levels are enhanced by a deliberate treble boost, called "dynamic equalization," that is designed to offset predictable high-end losses that are characteristic of the recording process. So long as the treble boost does not force the high-frequency content above the signal level that the tape can accept without excessive distortion, all is well. But in almost all recorders the amount of record treble boost ("equalization") at a given frequency is set by relatively simple electronic circuits that take no account either of the musical content or of the tape's capacity. Thus, for example, the record equalizer will supply a boost of approximately 15 dB to any 15,000-Hz signal fed to it, whether the original signal level was at +10 dB or -50 dB!

As Herman Lia, Tandberg's chief engineer for magnetic products, considered the matter, the best solution seemed to him to lie in varying the amount of record equalization applied to the signal according to the musical dynamics present—hence the name "Dyneq," for "dynamic equalization." In the Tandberg system, whenever the high-frequency content of the music is at a sufficiently low level to be able to profit from the normal record treble boost, that boost is applied, resulting in flat frequency response. When, on the other hand, musical high-frequency content would overload the tape if subjected to the boost, the treble pre-emphasis supplied by the recorder is actually reduced proportionately. Therefore, at the extremely high frequencies the output from the tape is actually increased for those signal levels at which excessively high record treble boost would have resulted in saturation and a consequent reduction in output level. More important still, so far as I could determine from listening tests with the Dyneq circuit switched in and out, I seemed to hear a distinct increase in musical clarity, even when no high frequencies were being boosted beyond what the tape could accept. I have not yet had an opportunity to confirm these impressions through my own laboratory measurements, but I have seen credible spectral analyses—performed on the very tapes I heard—that relate the increased clarity to a lack of intermodulation-distortion products.

VARYING the record equalization (as a way of matching sensitivity changes that occur when the bias is dynamically varied) is, of course, also a part of the Dolby HX approach. And technical literature received from Akai suggests that some of their 'ADR'-equipped units also modify the treble boost, though through a different control mechanism than that used by Tandberg. None of these techniques will turn a cassette deck into a studio mastering recorder—nor will metal-alloy tape or two-speed cassette decks. All such approaches reveal, however, a continuing and consumer-rewarding search for the best engineering solutions to the inevitable compromise between physical principles and product performance.

Tape Clubs

Q. Some years ago, through listings in the pages of Stereo Review, I took up the enjoyable hobby of corresponding by tape ("tapesponding") with members of tape clubs, both here and overseas. I stopped when I went off to college, but now that I have time again and would like to resume, I can't find clubs listed anywhere. Are there any left you could tell me about?

James H. Esser
Pittsburgh, Pa.

A. A check of my "Tape Club" file shows that the material is several years out of date. If there are any Tape Club Corresponding Secretaries (no single individuals, please!) who want to make their clubs' existence and activities known to readers like Mr. Esser, please write to me at Stereo Review, One Park Ave., New York, N.Y. 10016, and I'll try to list the names in a subsequent column.
Right from the start, its Canadian spirit rises above the rest. What makes it such a popular choice? Super lightness. Superb taste. If that's what you'd like, take off for Lord Calvert Canadian.

The spirit of Canada: We bottled it.
THE LINEAR DRIVE QUARTZ LOCK MT6335 IS THE KIND OF TURNTABLE YOU'LL EXPECT FROM THE NEW FISHER.

Fisher's technological leadership in high fidelity was never more elegantly stated than in the new MT6335 Linear Drive quartz lock turntable. Just as direct drive surpassed belt-driven turntables in terms of performance and reliability, so has Linear Drive from the new Fisher brought turntable performance into a new state-of-the-art.

SIMPLER IS BETTER. Nothing could be simpler or quieter than Linear Drive. The only moving part is the platter itself. There are no complicated motors or rotating electronic components—just a totally silent, dependable drive system with virtually nothing to go wrong, even after thousands of playings. (The MT6335 comes with an unheard-of five-year warranty.) Proof of the incredible stability and performance is seen in the specs: 0.035% wow and flutter. Rumble is an inaudible — 70 dB (DIN B).

QUARTZ LOCK ACCURACY. Total speed accuracy is assured by the most effective method in use today—a quartz lock phase locked loop servo circuit. Platter speed is continuously monitored and compared to a quartz reference signal for instantaneous speed correction. Deviation from 33 1/3 or 45 rpm is virtually zero.

STROBE & SPEED CONTROL. Other features combine to make the MT6335 a top-performing, easy-to-operate high fidelity turntable. There's a strobe light and fine speed control to alter record pitch and confirm speed accuracy, viscous damped cueing, automatic tonearm return and shut-off—and all controls are front-panel mounted where you can operate them with the dustcover closed. A carefully crafted, fully counterbalanced S-shaped tonearm accommodates most any cartridge and built into the handsome base is a styli overhang gauge.

LINEAR DRIVE—THE HEART OF THE MT6335 TURNTABLE.
The platter on the MT6335 is the only moving part of the turntable drive system. Encircling the platter is a 120-pole magnetic strip. Three drive coils beneath the platter act upon this magnetic strip to propel the platter. Magnetic pulses from the coils "overlap" one another to provide constant, smooth platter rotation. Conventional 12 or 16 pole direct drive systems can't compare to the MT6335 in terms of low wow and flutter, and freedom from "cogging." The utter simplicity of Fisher Linear Drive means years of trouble-free performance.

**IT'S WHAT YOU'D EXPECT FROM THE NEW FISHER.** We invented high fidelity over 40 years ago. We've never stopped moving forward. The MT6335 is a good example of that technological leadership. Part of the new Fisher. Where the only thing about us that's old is our tradition for quality and craftsmanship. See the MT6335 at your Fisher dealer. All these features and an under $250 price.

New guide for buying high fidelity equipment. Send $2.00 with name and address for Fisher Handbook to: Fisher Corporation, Department H, 21314 Lassen Street, Chatsworth, California 91311.

©Fisher Corp. 1979.

**SPECIFICATIONS:**
- **Motor**: 120 Pole Linear Drive Quartz
- **Phase Locked Loop**: Direct
- **Wow and Flutter (WRMS)**: 0.035%
- **Rumble**: UNI 455396
- **Speed Variation**: 0% (Quartz Lock On)
- **Speed Control Range**: ±6% (Quartz Lock Off)
- **Tracking Force Range**: 0.4 — 3.5 grams
- **Maximum Tracking Error**: ±1.5%
- **Anti-Skate Control**: Calibrated Adjustable
- **Cueing**: Viscous Damped
- **Weight**: 18 lbs.
- **Dimensions**: 17½" x 14½" x 6"
It might be said that those inclined toward the enjoyment of accurately reproduced music are also likely to have other sophisticated pursuits. That is evidently the case with Eric and Gilda Hilton, of Long Island, New York, who here demonstrate, in a single photograph, their interest in four separate fields. Mr. Hilton is an industrial photographer, and he and his wife are both audiophiles, oenophiles, and cabinetmakers by avocation. Their home system, as illustrated in the unusually detailed accompanying photograph, has been installed in an array of hand-built cabinets that serve to hold a portion of their wine collection as well.

The cabinet system was built by the Hiltons during the summer and autumn of 1978 and consists of ten separate cabinets constructed of oak-veneer plywood, with solid oak and walnut trim pieces and smoked-glass door panels. The wood was stained and given a lacquer finish, followed by polishing with steel wool and waxing. Six of the cabinets are of identical dimensions and therefore interchangeable, and the mid-section cabinets will accept standard rack-mount-size equipment.

The equipment pictured consists of (top left) a Soundcraftsmen 2205-600 graphic equalizer; (left-hand cabinet, top to bottom) a Sansui AX-7 audio mixer, a Pioneer CT-F1000 cassette deck, and a Sansui AU9900A integrated amplifier; (middle cabinet, top to bottom) a Pioneer RT-707 open-reel tape deck and a Sansui TU9900 AM/FM tuner. The turntable is a Technics SL 1100A, used with either a Shure V-15 Type IV or a Stanton 681 EEE cartridge.

The system's speakers are the Perfectionist Audio Components TM1, a transmission-line design in oak-finish cabinets. Additional equipment not shown in the photo includes a Uher 4400 portable open-reel recorder, several Sennheiser condenser microphones, a pair of Koss Pro/4 Triple A headphones, and a B.I.C. Beam Box antenna.

Is your system an Installation of the Month? To find out whether it is, send a clear snapshot and a brief description of its components to STEREO REVIEW, Dept. IOTM, One Park Ave., New York 10016.
THE COMPUTER RADIO.
AT 6:00 AM, IT'S SMARTER THAN YOU ARE.

Introducing The Great Awakening from General Electric. For starters, it's smart enough to let you set the time directly... no flipping around the clock.

You can program it to change stations for you. So it will rock you to sleep with Strauss, switch to your news station, and wake you at 6:15.

Then it comes back on to wake up your better half to Beethoven at 7:53. All with push-button ease.

When you forget to set the alarm... The Great Awakening remembers to remind you.

You can scan all the AM or FM stations by pressing a button or, to tune in one station, just punch in the frequency of your choice on the keyboard.

You can also program up to six stations into the memory. And recall any one with the touch of a finger.

For a little extra sleep press the Snooz bar. It lets you sleep an extra minute or an extra hour. You tell the memory how long.

The Great Awakening is so smart it even tells you when you've made an error. But it's easy to correct... just press a button.

WE BRING GOOD THINGS TO LIFE.
GENERAL ELECTRIC

CIRCLE NO. 25 ON READER SERVICE CARD

Model 7-4880
All nine new Dual turntables feature ULM... the Ultra Low Mass tonearm and cartridge system with 8 grams total effective mass.

All it takes to appreciate the significance of Dual’s new Ultra Low Mass system is a clear understanding of what happens when the stylus tracks warped records.

As the record warp rises and falls, the stylus should be able to follow it with a minimum of resistance from the tonearm. Otherwise, tracking angle and tracking force will vary widely as the stylus digs in on the way up the warp and takes off on the way down.

The high inertia of a conventional tonearm and cartridge combination, with approximately 18 grams total effective mass, can cause tracking force to vary as much as 30 percent. And a warp as small as 1.5 mm (barely discernible) can generate harmonic distortion of 2.7 percent. That’s audible.

The new Dual ULM tonearm and cartridge system has only 8 grams total effective mass. Tracking the same warped record under the same conditions, harmonic distortion is reduced to only 0.01 percent. That's 270 times less!

Not only is the overall sound audibly improved, but stylus and record life are significantly extended.

What has made the ULM system possible? First, Dual's straight-line tubular tonearm with its gyroscopic gimbal suspension and unique system for setting tracking force without increasing effective mass. This tonearm can now accept a cartridge weighing as little as 2 grams. Second, a new generation of cartridges that resulted from a collaboration between Dual and Ortofon. These ULM cartridges weigh only 2.5 grams, including mounting bracket and hardware.

Together, the new ULM tonearm and ULM cartridge form a perfectly matched system, with total effective mass less than half that of conventional tonearms and cartridges.

To experience the demonstrable advantages of ULM, bring a badly warped record to your Dual dealer. Listen to it when played with the ULM tonearm and cartridge system. You will hear the difference that ULM can make on all your records. Then you need only decide which of the nine new Dual turntables best meets your requirements for convenience and refinements.

Prices begin at less than $180 for the multiple play model 1257. The top model, the automatic single-play 731Q with quartz PLL direct drive, is less than $560. ULM cartridges are optional.

For the complete ULM story, please write to: United Audio, 120 So. Columbus Ave., Mt. Vernon, NY 10553.
## Prices if Sold Separately...

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1021 AM/FM Stereo Receiver</td>
<td>5257.26</td>
</tr>
<tr>
<td>#1022 Tape Player/Recorder</td>
<td>168.84</td>
</tr>
<tr>
<td>#1023 Speakers (Pair)</td>
<td>149.77</td>
</tr>
<tr>
<td>#1024 Turntable</td>
<td>78.00</td>
</tr>
<tr>
<td>#1025 Stand</td>
<td>64.97</td>
</tr>
</tbody>
</table>

**Price if Purchased Separately**: $718.84  
**Our Advertised Price**: $488.84

### Put the system together at K mart and save $230.

K mart put some spectacular savings together on this Silver Marshall stereo component system. Now through October 27, you can save $230 off the "purchased separately" price.

The system features: **Receiver**: an AM/FM stereo receiver with lighted dial scale, flywheel tuning knob, speaker selector switch and headphone jack. **Eight-Track and Cassette Player/Recorder**: featuring record level controls, headphone and microphone jacks, tape counter and deluxe features such as channel L.E.D.'s and auto stop. **Turntable**: deluxe automatic full-size BSR turntable with magnetic cartridge and cueing control lever. **Speakers**: four-way deluxe passive radiator-type matched acoustic suspension speakers in 23-inch walnut grain cabinets. **Vertical Component Stand**: houses turntable, player/recorder and receiver, with storage area for records, on easy-roll casters. The system is sale-priced at over 1,450 K mart stores across the U.S.A.
One criterion that has been applied to the evaluation of many types of audio components—particularly loudspeakers, but also amplifiers, phono cartridges, and even cables (!)—is usually referred to as stereo imaging. Being (thus far) largely undefined in a technical sense, it has proved to be an ideal catchall for many of the unknown or imperfectly understood effects that prevent music reproduction in the home from providing the subjective auditory sensations of being at an original performance.

As an abstraction, "stereo imaging" is a rather appealing and deceptively simple concept, and it is therefore easy to assume that we understand what someone else means when he uses the term. It is only when we get down to specifics that we may begin to question the very idea of an exact position in space from which a sound presumably originates, and the re-creation of that effect during its reproduction in another environment.

That, at least, is my interpretation of the meaning of a "stereo image." If a sound originates at a certain point in space, which may be defined by a set of three-dimensional (X, Y, Z) coordinates, or in polar form as being located at a certain distance on a specific vector from the listener, it should appear to originate from that point (or, at least, from that direction) when it is heard in the original environment. If that is so, then an ideal stereo recording (or perhaps a more complex multi-channel recording) should be reproducible in a different room and still give a listener a sense that the sound is coming from the correct point or direction.

My problem is that I do not experience this sort of definite localization of sound when I attend a concert or any other live performance, vocal or instrumental. I can usually tell if the source is at the right or the left of the stage, or perhaps in the center. But that is about the limit of my spatial resolution in a real-world listening situation. That is very different from hearing impulses or tone bursts, perhaps in an anechoic environment where directions can be discerned quite readily. In my experience, a soloist somewhere in the orchestra cannot be located from a listening position in the rear half of the auditorium (where, by definition, half the audience is located) without visual clues. Even when I have spotted the soloist visually, closing my eyes blurs his physical relationship to the rest of the orchestra.

To me, this is not at all disturbing, but merely the way things are, and I therefore expect no more than that from my home music system. It surprises me that so many audiophiles do expect their stereo systems to locate, precisely, a certain instrument on their stereo stage. If that can be done, it is surely a gross distortion of reality, no matter how intriguing or pleasing the effect may be. I have even heard claims that the height, or vertical position, of a sound source is detectable in reproduction with certain speakers and other components. Barring the remote possibility of a performer swinging from a trapeze or standing on a balcony, I cannot even imagine how that would enter into a real musical situation.

There can be no doubt that the localization of sounds in space is a subject of great interest to psychoacoustic researchers. This was, after all, basic to the development of the various quadraphonic systems a few years ago. Unfortunately, too many quadraphonic records sounded as though they'd been made as aids to psychoacoustic testing rather than to re-create a musical experience in a listener's home. I don't know how much, if anything, that had to do with the demise of "quad," but for me it destroyed a good part of the potential appeal of the technique.

Often when I receive speakers for testing, the manufacturer emphasizes the stereo-imaging qualities of his product. I am disappointed that I cannot comment on these qualities—in most cases because I do not find their presence or absence to have much to do with how "good" I find the speaker's sound to be. It is very easy to hear differences between speakers, and many of them could probably be described as "stereo-imaging" qualities. It is not so easy to decide which, if any, of these qualities is the most accurate or realistic.

Another meaning of the term "stereo image" covers the effect of the listener's moving about relative to the speakers. There will normally be some tendency for the apparent positions of different sounds to shift laterally as the listener moves about. The more "stable" the image, the less it will shift as the listener moves. I can certainly agree that I find a stable image a desirable quality. However, I do not believe that a shifting of the stereo image as the listener moves is necessarily bad. In fact, the theory of stereo reproduction predicts that such shifts will take place.

Apparently some people are much more sensitive to this effect than others, and I am blessed (or cursed, depending on one's viewpoint) with an almost total tolerance for image shifts. I do hear them—and I could not care less. It is not a stereo image that gives a stereo program its sense of realism for me; it is the atmosphere that has been recorded, plus the expected qualities of flatness of frequency response, low distortion, and the like. For someone else there might be an entirely different set of priorities. (Continued on page 44)
Music is full of color. Incredibly beautiful color. Color that you can hear... and (if you close your eyes) color you can almost see. From the soft pastel tones of a Mozart to the blinding brilliant dashes of hard rock to the passionately vibrant blues of the Blues.

In fact, one of the most famous tenors in the world described a passage as "brown... by brown I mean dark... rich and full."

Music does have color. Yet when most people listen to music they don't hear the full rich range of color the instruments are playing. They either hear music in black-and-white, or in a few washed-out colors.

That's a shame. Because they're missing the delicate shading, the elusive tints and tones, the infinite hues and variations of color that make music one of the most expressive, emotional and moving arts of all.

Music has color. All kinds of color. And that is why Sony is introducing audio tape with Full Color Sound.

Sony tape with Full Color Sound can actually record more sound than you can hear. So that every tint and tone and shade and hue of color that's in the original music will be on the Sony tape. Every single nuance of color, not just the broad strokes.

Sony tape with Full Color Sound is truly different. Full Color Sound means that Sony tape has a greatly expanded dynamic range — probably more expanded than the tape you're using. This gives an extremely high output over the entire frequency range, plus a very high recording sensitivity.

There's even more to Sony tape with Full Color Sound, however. Sony has invented a new, exclusive SP mechanism for smoother running tape, plus a specially developed tape surface treatment that gives a mirror-smooth surface to greatly reduce distortion, hiss and other noise. Each type of tape also has its own exclusive binder formulation, that gives it extra durability.

Any way you look at it — or rather, listen to it, you'll find that Sony tape with Full Color Sound is nothing short of superb. If you're not hearing the whole rainbow on your audio tape, try recording on Sony tape with Full Color Sound. Then you'll be hearing all the glorious full color that makes every kind of music, music.
Of course, it is presumably possible to evaluate the imaging accuracy of a loudspeaker by some form of “live-vs.-recorded” comparison. It is not easy to do, however, and such tests have plenty of logical and practical weaknesses. For me, one of the most damning criticisms that can be leveled against this sort of testing, with which I have had considerable experience, is that a speaker that is demonstrably accurate may not sound very good at all when compared with a speaker that is much less accurate. With apologies to Charlie the Tuna, it seems to be a matter of whether we want good sound or sonic accuracy! Sometimes both are combined in a single product, but this is rare, and there is usually a drawback such as high price or undesirable physical qualities.

**Equipment Test Reports**

By Hirsch-Houck Laboratories

**Mordaunt-Short Festival Series 2 Speaker**

Mordaunt-Short is a small but well-known (in Britain) English loudspeaker manufacturer whose products have only recently become available in this country. Although most of their products are physically compact, they have been designed to meet the quality standards one would normally apply to much larger and costlier speakers.

The Festival Series 2 is a two-way system whose sealed enclosure contains an 8-inch (nominal) woofer and a 3/4-inch dome tweeter. The crossover frequency is 3,500 Hz, with the low-pass section having a 12-dB-per-octave slope and the high-pass section cutting off at 18 dB per octave. Nominal impedance is 8 ohms. The Festival Series 2 is rated to deliver a sound-pressure level of 86 dB at 1 meter in an anechoic environment when driven by 6.7 volts (3.6 watts) of pink noise and to be able to handle up to 45 watts of “contoured random noise.”

The walnut- or teak-finish wooden cabinet of the Festival Series 2 is 177/8 inches high, 11 inches wide, and 7 3/4 inches deep. Together with its 14-pound weight, this qualifies the Festival as a true “bookshelf” speaker system. The black cloth grille snaps off to reveal the drivers. The input terminals are recessed into the rear of the cabinet, and there are no user-accessible level adjustments or fuses. The Mordaunt-Short Festival Series 2 is sold in pairs at $385 per pair.

- **Laboratory Measurements.** We placed the Festival Series 2 speakers approximately at ear level, a foot from the back wall, for our listening and testing. The reverberant-field measurement of the frequency response showed considerable high-frequency “beaming.” With one speaker on the microphone axis and the other about 30 degrees off, the difference between the measured response curves above 10,000 Hz was about 10 dB. The close-miked woofer response was very smooth in the midrange (with a rise of about 6 dB at the woofer acoustic resonance of 85 Hz) before dropping off at 12 dB per octave at lower frequencies.

The combined response curve indicated that the tweeter output averaged about 5 dB more than the output at lower frequencies, and there was a slight but distinct dip of about 2.5 dB at the crossover frequency (about 3,000 Hz). The overall response variation of the speaker was established by the woofer resonance and the crossover dip; it was +6, -2.5 dB from 55 to 20,000 Hz. Neglecting the woofer peak (which would in any case be modified by room size and placement of speaker and listener), the response was +4.5, -2.5 dB from 130 to 20,000 Hz.

The sensitivity of the Festival Series 2 was typical of acoustic-suspension speaker systems. Driven by 2.83 volts of random noise in an octave centered at 1,000 Hz, the speaker's output at a 1-meter distance was 84.5 dB.

The woofer distortion was measured with constant input levels corresponding to 1 watt and 10 watts into an 8-ohm load from 100 Hz downward in frequency. At 1 watt, the distortion was under 0.1 percent down to 70 Hz, rising to 0.5 percent at 41 Hz. Increasing the drive to 10 watts caused an appreciable increase in distortion at all frequencies; it was 2.5 percent at 70 Hz and 13.5 percent at 40 Hz.

The system impedance reached its minimum of about 7 ohms from 150 to 200 Hz and averaged about 8 to 10 ohms over most of the audio band except for a bass-resonance rise to about 19 ohms at 75 Hz. The tone-burst response of the speaker was excellent.

- **Comment.** Although our measurements indicated that the Mordaunt-Short Festival Series 2 was a “good little speaker,” the question of how good could be answered only by listening. The answer was soon apparent—very good (for a small speaker).

One cannot expect a speaker of this size, and of conventional design, to match the performance of a larger, more expensive system, and it does not. Nevertheless, with the Festival Series 2 speakers placed on top of a pair of large floor-standing systems, we were struck by the fact that the similarities in their sound qualities were much more prominent than their differences. The Festivals cannot deliver really deep bass, and they do not attempt to “fake it” with an artificial mid-bass rise. As a result, on program material lacking strong content below about 100 Hz, they sounded remarkably like the comparison systems (which were about six times their size and weight!).

With most program material we used, the Festivals were very smooth and clean sounding, sometimes a little bright or thin (these terms really refer to the same thing—a degree of imaging).
The one and only computer-locked, digital drive changer-turntable. BIC introduces the 80Z. With a brain equal to room-size computers of just 10 years ago. A microprocessor that instructs a system intelligent enough to actually read and adjust platter speed (not simply motor speed). A unique digital drive system that's capable of unequalled nominal speed accuracy (to within .01 rpm). With a digital read-out that's over 300% more accurate than any strobe. The state-of-the-art 80Z is one of six new belt drive, straight tone arm BIC models. For complete details write BIC AVNET, Dept. Z, Westbury, N.Y. 11590. The new 80Z Changer-Turntable.
Made for the Magic in Music.

We believe in music. And we believe in the subtleties in music. That's why Clarion products are made to give you true, clean audio, so when there's a gentleingle of a cymbal or the snap of a snare drum... you'll hear it. Clarion believes that to really get the magic in music, you need a quality stereo—Clarion quality.

Clarion literally started car stereo. We introduced the first under-dash cassette player and the first equalizer—speaker and the first separate element three-way speaker system. Then we put all together—we put together the first true hi-Fidelity system for the car. We're dedicated.

Clarion is the largest independent car stereo manufacturer in the world today. These products continue our tradition as a leader in car stereo, so it's easy to find the perfect system for your needs. From speakers to full line of stereo, from speakers to cassette players, Clarion has a stereo in every price range. You'll find that our systems really are better. Because... with Clarion, the magic in music starts the moment you start your car.

Every Clarion stereo is made like the first of the line. Every time. That's why Clarion products are made to give you true, clean audio, so when there's a gentleingle of a cymbal or the snap of a snare drum... you'll hear it. Clarion believes that to really get the magic in music, you need a quality stereo—Clarion quality.

Clarion literally started car stereo. We introduced the first under-dash cassette player and the first equalizer—speaker and the first separate element three-way speaker system. Then we put all together—we put together the first true hi-Fidelity system for the car. We're dedicated.

Clarion is the largest independent car stereo manufacturer in the world today. These products continue our tradition as a leader in car stereo, so it's easy to find the perfect system for your needs. From speakers to full line of stereo, from speakers to cassette players, Clarion has a stereo in every price range. You'll find that our systems really are better. Because... with Clarion, the magic in music starts the moment you start your car.

Every Clarion car stereo system the magic and romance in music can be yours. And, it doesn't matter how much you spend. With Clarion, you can always get the magic in music. If you want to spend a little as $175 for a full-featured system or you can spend a little as $175 for a full-featured system and get at least 110 countries. For over three decades, Clarion has given its owners years of trouble-free operation. So you know that when you own a Clarion, you'll never be lacking the magic in your music.

Every Clarion car stereo is made like the first of the line. Every time. That's why Clarion products are made to give you true, clean audio, so when there's a gentleingle of a cymbal or the snap of a snare drum... you'll hear it. Clarion believes that to really get the magic in music, you need a quality stereo—Clarion quality.

Clarion literally started car stereo. We introduced the first under-dash cassette player and the first equalizer—speaker and the first separate element three-way speaker system. Then we put all together—we put together the first true hi-Fidelity system for the car. We're dedicated.

Clarion is the largest independent car stereo manufacturer in the world today. These products continue our tradition as a leader in car stereo, so it's easy to find the perfect system for your needs. From speakers to full line of stereo, from speakers to cassette players, Clarion has a stereo in every price range. You'll find that our systems really are better. Because... with Clarion, the magic in music starts the moment you start your car.
Do you know when you can save 35%, or even 60%, on out-of-state phone calls?

"Phone Thing" has all the answers when it comes to saving money on direct-dial calls. Just put it all together, check "Phone Thing" before you make your next call, and start saving every time you reach out and touch someone.

Bell System

Is your "Phone Thing" gone? If so, we'll send you one!
Write: "Phone Thing," P.O. Box 502, Broomall, PA 19008
balance between the strong, extended high end and the less prominent bass). We must again emphasize that the Festival by itself does not give the impression of being bass-shy; this is audible only when one compares it with speakers having a very deep, smooth bass response. Considering the size of the Festival's woofer, which is closer to 6½ than 8 inches in diameter, this is a very creditable achievement.

One would have a hard time finding a conventional speaker (that is, one without mo-tional feedback or built-in amplification) the size of the Mordaunt-Short Festival Series 2 that would sound appreciably better (natural-ly, this is a judgment that can only be made by the individual listener). Although the manufac-turer states that the Festival can be used with amplifiers rated at up to 90 watts, and with more powerful amplifiers if special care is exercised, we would recommend fusing the speaker if super-power amplifiers are used. We had no difficulties driving the Festivals to very high listening levels with a 200-watt amplifier, and the program material did not harm the speaker in any way. However, a mishap in the amplifier (apparently an ultra-sonic oscillation) blew out the tweeter of one of the Festivals. The tweeter of the large com-parison system on the same channel would also have been destroyed if its manufacturer had not put a fuse in the tweeter circuit.

If you are a pipe-organ or bass-drum aficionado, the somewhat expensive Festival would not be an ideal choice; but for most music listening at moderate levels it is a first-rate hi-fi reproducer.

Circle 140 on reader service card

Pioneer SA-7800
Integrated Stereo Amplifier

Pioneer describes its new SA-7800 integrat-ed amplifier as a "non-switching amplifi-er" (NSA). This is not to distinguish it from the so-called "class-D" or pulse-type switch-ing amplifiers, but to emphasize a circuit de-sign that achieves a smooth, crossover-notch-free transition from one output transistor of a push-pull pair to the other as the wave-form passes through the zero-voltage axis. The Pioneer SA-7800 is rated to deliver 65 watts per channel to either 8- or 4-ohm loads, from 10 to 20,000 Hz, with no more than 0.009 per cent total harmonic distortion. The power amplifier and tone-control amplifier sections are each direct-coupled, and the single coupling capacitor between the two sections is the only barrier to full d.c. coupling from the amplifier's high-level inputs to the speaker outputs.

Although the front panel of the SA-7800 is in most respects conventional, it has a dual fluorescent power "meter" framed in a bezel near the upper left corner. In operation, parallel lines of bright blue dots in the meter indicate instantaneous power peaks from less then 0.001 watt to a maximum of 80 watts referenced to 8-ohm loads. The power display has a fast attack and a much longer decay time, so that one sees a continuous display of the peak power level in watts delivered by the amplifier.

In most conventional class-B or class-AB amplifiers, the current flow is not transferred smoothly from one set of output transistors to the other as the polarity of the signal wave-form changes. There is always a certain amount of discontinuity, or switching action, that results in "crossover" or notch distor-tion. This appears as a small "jog" in the waveform at the zero-voltage axis which intro-duces a large number of high-order har-monics into the amplifier output. Although these harmonics are at a very low level in a well-designed amplifier, they are considered to be audibly offensive out of proportion to their magnitude.

In a true class-B amplifier, the crossover notch can be quite severe, so most high-fidelity amplifiers are biased to operate in class AB (which has both transistors conducting—to some degree—all the time, thus minimizing the crossover distortion). This requires that more heat be dissipated from the output trans-isitors, calling for larger heat sinks and power supplies and increasing the size, weight, and cost of the amplifier. An amplifier may also be operated in full class A—with much larger no-signal current flow—giving very low efficien-cy but with no crossover distortion.

Pioneer's NSA circuit combines the cool operation and high efficiency of class B with the extremely low distortion of a class-A amplifier. Apparently it varies the bias on the transistors dynamically according to the sig-nal requirements. Part of the cool operation of the SA-7800's output stages can be credited to an unusual heat-sink design, consisting of a

(Continued overleaf)
The output at 1,000 Hz, with both channels driven to clipping, was 82.6 watts per channel into 8 ohms, 118 watts into 4 ohms, and 57 watts into 16 ohms. The HIF clipping headroom was 1.04 dB at 8 ohms and 2.6 dB at 4 ohms. The HIF dynamic headroom was 1.7 dB at 8 ohms and a very high 4.2 dB at 4 ohms, corresponding to short-term outputs of 95.6 and 170.5 watts per channel.

The amplifier required only 16 millivolts (mV) at a high-level input for a reference output of 1 watt, and the A-weighted signal-to-noise ratio (S/N) was 78.7 dB. The phono sensitivity was 0.23 mV, with a 77.2-dB S/N. The phono input overloaded at about 300 mV at low and mid frequencies. At 20 kHz the overload was at a level equivalent to a midrange input of 110 mV. The measured phono-input impedance was 50,000 ohms in parallel with 250 picofarads.

The Pioneer SA-7800 produced some of the lowest distortion readings we have ever measured. In order to measure the distortion, it was necessary to pass the output signal through the Radford distortion analyzer to attenuate the fundamental component and then to pass the harmonics from the Radford's output to our Hewlett-Packard spectrum analyzer. With both channels of the SA-7800 driven at 1,000 Hz into 8-ohm loads, the distortion was an incredible 0.0003 per cent at 1 watt (which we believe to be the residual distortion of our Hewlett-Packard 239A audio oscillator). It increased linearly to 0.001 per cent at 17 watts and 0.0016 per cent at the rated 6.5 watts. At the clipping point of about 80 watts, the distortion was still only 0.002 per cent.

Driving 4-ohm loads, the distortion was 0.0009 per cent at 1 watt, 0.0011 per cent at 40 watts, and 0.0038 per cent at 120 watts. Although the amplifier is not rated for it, we also measured its distortion and power output with 2-ohm loads. Beginning with 0.0014 per cent distortion at 1 watt, it rose to 0.002 per cent at 70 watts and 0.003 per cent at 90 watts (the outputs clipped at 114 watts). The intermodulation distortion (IM) with 8-ohm loads was 0.007 per cent at 1 watt, 0.004 per cent in the 5- to 10-watt range, and 0.013 per cent at 80 watts.

The distortion at rated power (8 ohms) was just over 0.002 per cent at 20 Hz, under 0.0015 per cent in the midrange, and 0.007 per cent at 20,000 Hz. At half power and one-tenth power, the shape of the distortion curve was similar, but the measured values were lower.

The tone controls had conventional response curves, with the bass turnover frequency shifting from under 200 Hz to about 500 Hz as the control was advanced; the treble-response curves hinged at about 2,000 Hz. The loudness compensation boosted both low and high frequencies, but only to a small extent. The infrasonic filter dropped the response by 2.5 dB at 20 Hz. The RIAA phono equalization was very accurate—within ±0.5 dB from 20 to 20,000 Hz. When it was measured through the inductance of a phono cartridge, the high-frequency response rose above 5,000 Hz to a maximum of +1.5 dB at 10,000 Hz before falling off to -2 dB at 20,000 Hz. The phono r.f.-interference filter consists, according to the schematic, only of a 2,200-ohm resistor in series with each phono input. This had no measurable or audible effect on the performance of the preamplifier. Since we had no r.f. interference problems (nor any standard way to generate them), we could not judge the filter's effectiveness.

When the amplifier was overdriven, the protective relay shut off the outputs readily with a very rapid off-on action that caused interruptions of the program. The relay also shut off the amplifier when it was faced with a 250-kHz input signal, thereby limiting the slew factor to 12.5. The fluorescent power-indicator calibration (which is at decade power-intervals) was quite accurate.

- **Comment.** In the design of the SA-7800, Pioneer seems to be returning to greater simplicity of control functions (we note the absence of switchable tone-control turnover frequencies, midrange (tone controls, elaborate switchable filters, and the like). However, in respect to true operating versatility the SA-7800 would be hard to fault.

The fluorescent power indicator is not a "gimmick" or purely cosmetic feature. An accurate peak-responding meter such as this is one of the most educational features that can be included in an amplifier. We are still occasionally surprised to find that wide-dynamic-range programs whose lower-level passages are heard at milliwatt levels can nevertheless overdrive an amplifier—even one with as much power as this. It can happen.
Hats off to Maxell. Their UDXL cassette established a new standard of sound quality for all cassettes. The new DAK ML90 starts another new technology. A technology of protection from Hi frequency loss and of extreme reliability.

Later we are going to offer you valuable bribes, just for testing these cassettes, risk free; so read on!

YOUR TIME IS PRECIOUS

Imagine yourself just finishing recording the second side of a 90 minute cassette and horrors, the cassette jams. Tape is wound around the capstan, your recorder may be damaged and you've just wasted 90 minutes of your time and perhaps lost a great recording off FM.

Enter DAK. We manufacture over one million cassettes each month in our factory. Many of our tapes are used for high speed duplication where they are recorded at speeds up to 8 times normal. This is the ultimate stress for cassettes and causes more failures than any other use.

When we first started, 12 years ago, DAK's cassettes failed, just like many others. So we installed $20,000 worth of high speed duplication equipment at our factory and set out to design the perfect cassette.

MOLYSULFIDE

Failure after failure. For six years we substituted, remade, tested and retested until we positively linked the major cause of cassette failure to the slip sheets, or liners in the cassette. Even Sony, Panasonic and TDK were hot on our heels, because they have now also come out with new liners.

We developed polyester slip sheets with raised spring loaded ridges to guide each layer of tape as it winds. We coat the liners with a unique formulation of graphite and a new chemical, molysulfide.

Molysulfide reduces friction several times better than graphite and allows the tape to move more freely within the cassette. The molysulfide is tougher and makes the liner much more resistant to wear.

Hi frequency protection! Tape is basically plastic, and as it moves within the cassette internal friction causes the build up of static electricity, much as rubbing a balloon against your hair, or scuffing your shoes on a carpet in dry weather.

Static electricity within the cassette was drastically reduced by the low friction of the molysulfide and easily bleed off, so that its tendency to erase very high frequencies was drastically reduced. A very important consideration for often played tapes.

MAXELL IS BETTER

Yes, honestly, if you own a $1000 cassette deck like a Nakamichi, the frequency responses of Maxell UDXL or TDK SA are superior to DAK and you just might be able to hear the difference.

DAK ML has a frequency response that is flat from 40cps to 14,500 ±3db. Virtually all cassette recorders priced under $600 are flat ±3db from 40cps to about 12,000cps, so we have over 2000cps to spare, and you'll probably never notice the difference.

No apology. We feel that we have equalled or exceeded the mechanical reliability of virtually all cassettes and offer one of the best frequency responses in the industry. Maxell UDXL is truly the Rolls Royce of the industry, and DAK is comparable to the 100% US made Cadillac or Corvette!

Price DAK manufactures the tape we sell. You avoid paying the wholesaler and retailer profits. While Maxell UDXL 90s may sell for $3.50 to $4.50 each at retail, DAK ML90s sell factory direct to you for only $2.19 each complete with deluxe boxes and index insert cards.

YOU WIN

You are paying less for the 10, 90 minute cassettes than you would pay for the comparable bribes we are offering if you went to a Radio Shack store.

CHECK THE VALUE OF THE DAK BRIBES AT RADIO SHACK

The next time your batteries are dead in a calculator, radio, flashlight or battery operated recorder, you'll be glad you have this versatile battery eliminator for AC adapter.

You'll save lots of money on batteries because now you can plug in, instead of using up expensive batteries. 4 voltages: 3, 4.5, 6 and 9 volts plus 4 plugs to fit virtually anything battery powered. Radio Shack sells a similar 4 voltage adaptor for $9.95.

Think of it, 10 of the most commonly used six foot hook up cords with RCA plugs at each end. You can connect friends recorders, extra tuners, or virtually any stereo equipment. You'll certainly appreciate these cords in the years to come. Radio Shack sells their six foot cords for $1.89 each.

You need clean tape heads to make good recordings. The easiest way to clean your heads is with DAK's 12 oz. deluxe spring head cleaner, complete with handy snorkel tube. Radio Shack doesn't sell a single large 12 oz. can, but 12 oz. from them costs $6.36.

The comparable Radio Shack prices are not list prices, but the actual prices you would pay at a store when this ad was written.

DAK unconditionally guarantees all DAK cassettes for one year against any defects in material or workmanship. Why not order an extra group of 10 DAK ML90 cassettes for one year against any defects in material or workmanship. Why not order an extra group of 10 DAK ML90 cassettes for yourself or a friend? We will add one free ML90 cassette to each additional 10 you buy and of course you get all 3 bribes with each group of 10 tapes.

DAK INDUSTRIES INCORPORATED

Call TOLL-FREE (800) 423-2636
In California Call (213) 984-1559

10 free 6 ft. RCA to RCA hook up cords
and without the peak meters one might easily suspect the amplifier of being defective.

The protective system of the SA-7800 was so effective as to be disconcerting. For instance, on some flamenco music, the sound was severely chopped up, puzzling us until we noticed that the stamping of feet was driving the amplifier to and beyond its maximum output, and the relays were shutting off the speakers! Still, using acoustic-suspension speakers, the playing level was not at all loud.

Our experience suggests that this amplifier will serve best with speakers of moderately high efficiency unless one tends to listen at rather modest levels.

The distortion of the NSA circuit—or rather the lack of it—is clearly evident, and most impressive. Although the significance in respect to listening quality of such vanishingly low distortion can be debated, it is certainly a technical achievement of no mean proportions. From our measurements alone, we would have guessed that this was a pure class-A amplifier of exceptional quality, except for the fact that it runs cooler than most class-AB amplifiers of similar power. As our measurements also show, the SA-7800 is rated very conservatively. One thing is certain—the Pioneer SA-7800 is as fine-performing a medium-power amplifier as we have seen, and it is available at a most attractive price.

Circle 141 on reader service card

---

Audio-Technica AT25 Phono Cartridge

Like many Audio-Technica phonograph cartridges, the new AT25 moving-magnet cartridge features the company's proprietary dual-magnet design. The AT25 is an integrated cartridge/head-shell unit that plugs directly into the end of any tone arm designed for the universal four-pin plug-in head shell.

Most moving-magnet cartridges have two coils and pole pieces per channel, with the coils wired to reduce the sensitivity to hum induced by an external magnetic field. In spite of this mode of connection, it is usually necessary to shield the cartridge's coil system with mu-metal or a similar high-permeability material. Audio-Technica uses toroidal-wound coils (one per channel) instead of the usual solenoid type. These doughnut-shaped coils, though much more difficult and expensive to wind (especially in the sizes used in a phonograph cartridge), have the advantage of being virtually immune to external hum pickup and crosstalk between the coils since an ideal toroid has no external magnetic field of its own and is not sensitive to external fields from other sources.

The laminated Permalloy core of each coil is split, with its ends serving as the pole pieces. The magnet for each channel, a tiny rod extending at right angles from the stylus cantilever just forward of its pivot point, fits into the corresponding gap in such a way that its motion induces a voltage in the coil. The two toroids are placed parallel and quite close to each other, with a mu-metal shield between them to eliminate possible electrical crosstalk (since the toroids cannot be made absolutely perfect in their self-containment of magnetic fields).

It is not feasible to wind as many turns of wire on a nearly microscopic toroidal core as on a straight core, so the inductance of the AT25 coils (85 millihenries) is only a fraction of that of a typical magnetic cartridge. However, the electromagnetic efficiency is high, so the cartridge output is comparable to that of other fine cartridges of conventional construction. The low inductance makes the cartridge response essentially independent of load capacitance, much like a moving-coil cartridge and for the same reason.

The stylus cantilever, made of beryllium only 0.3 millimeter in diameter, is supported in a toroidal-shape rubber damping ring which establishes the stylus compliance. Each cartridge is individually adjusted for compliance during manufacture. The two tiny magnets, at right angles to each other and to the cantilever, are just forward of the damping ring.

At the free end of the cantilever is a nude-mounted diamond with a 0.09-millimeter square shank that accurately establishes its orientation. The elliptical contact radii are 0.2 x 0.7 mils. The stylus assembly is replaceable by the user, though not quite so simply as the usual "slide in" replacement stylus. The stylus of the AT25 is firmly anchored in place by a set screw, and a small screwdriver is supplied with each replacement stylus.

The cartridge body of the AT25, made of magnesium for light weight and high rigidity, has an integral carbon-fiber finger lift and a rubber pad on top of the body to damp any internal vibration modes. The four-pin plug that is part of the body fits any arm designed for the universal four-pin bayonet-locking head shell. Since there are some differences among arms in the stylus overhang required for minimum tracking error, the AT25 cartridge can be shifted slightly within its body structure by loosening a small Allen set screw near the plug with a wrench furnished with the cartridge. The actual distance from the stylus to the end of the tone arm (from 47 to 55 millimeters) is shown on a scale on the side of the cartridge. If the tone-arm manufacturer specifies that dimension (as many do), the setup is extremely simple. The cartridge can also be rotated slightly about its axis to position the stylus perpendicular to the record surface; the same set screw, when tightened, clamps the cartridge firmly in position for both overhang and azimuth.

The weight of the Audio-Technica AT25 is 1.2 grams, which is roughly comparable to the combined weights of a typical cartridge and tone-arm head shell. Audio-Technica recommends that the cartridge be terminated in 47,000 ohms in parallel with 100 to 200 picofarads of capacitance (the exact value is not critical). The range of tracking force is 0.8 to 1.6 grams, with 1.2 grams being the suggested setting. The output at a 5-centimeter-per-second lateral velocity is 2.2 millivolts, with the channel levels matched within 0.5 dB. The rated frequency response is 10 to 25,000 Hz, with no tolerance stated. The instruction booklet (more complete than most in its description of the design and construction of the cartridge) does list the specific records and test equipment used to establish the cartridge ratings. The same cartridge packaged in a conventional format, for installation in any arm having standard ¼-inch mounting centers, is known as the AT24. The price of the AT25 is $275; the AT24 is $250.

- Laboratory Measurements. The Audio-Technica AT25 was plugged into the tone arm of a Denon DP-2500 record player. With the Denon tone-arm mass (nominally 20 grams), the low-frequency resonance was at 7 Hz, with an amplitude of about 10 dB. The cartridge was terminated in 47,000 ohms in parallel with the 70-picofarad capacitance of the Denon arm and its signal cables. At a velocity of 3.54 centimeters per second the output was 2.2 millivolts, as rated, and the channel levels were matched within 0.2 dB. The vertical angle of the stylus was measured as 20 degrees.

We measured the frequency response and channel separation of the AT25 with a number of records, including the CBS STR 100 and the JVC TRS-1007, as well as with an Audio-Technica record, the 6605. With either the CBS or JVC record, the frequency response was flat within ±1.5 dB up to 15,000 Hz, rising to about +4 dB at 20,000 Hz. Although we did not measure above that frequency, it was apparent that the stylus resonance was somewhere above 20,000 Hz, with an amplitude greater than +4 dB. With load-capacitance (Continued on page 56)
FULLY AUTOMATIC DIRECT DRIVE TURNTABLE

THE LUX ANSWER TO THE QUALITY VS. CONVENIENCE QUESTION.

Until the Lux PD-277, music lovers seeking a quality, noise-free, wow-less turntable and a precision-tracking, low-mass tonearm had little choice. They assembled their own, perhaps using one manufacturer's turntable and another's tonearm. Satisfactory performance came only after hours of fiddling with assembly and adjustment.

Of course, the resulting player lacked an automatic tonearm lift, set-down or return. The stylus had to be manually—and very carefully—placed in the lead-in groove. And at the end of every disc, there was a mad rush to lift the arm as it ground its way round and round the run-out groove. But these inconveniences were the price many audiophiles were willing to pay for the quality they sought.

Lux's audio engineers appreciated the problem and created the solution: the second-generation fully automatic, direct-drive turntable.

Incorporating the latest in sophisticated direct-drive design, the PD-277's DC servo-controlled brushless and silent motor provides a 0.03 percent wow and flutter specification and signal-to-noise of 60 dB. A novel high-density mat with contours and materials specifically designed to damp spurious platter and record vibrations is integral to the die-cast aluminum platter—not simply resting on it.

Similar attention is given to electromechanical detail in the Lux straight-line tonearm. Achieving the lowest practical mass by use of a stripped-down integrated headshell, the 240mm tonearm will accept and bring out the best from any of today's line-phono cartridges. Other critical mechanical problems, such as resonance and tracking instability, are solved by the arm's nested-tube design and vertical-pivot construction.

All essential functions of the PD-277 are electronically controlled. For example, a separate motor operates the tonearm, instead of conventional noisy, drag-producing mechanical arrangement. And the end-of-record lift is triggered by a photoelectric sensing system. And, of course, the arm motor completely disengages when not in use.

The Lux attention to detail also includes other necessities—and niceties—such as adjustable anti-skating, a ±4 percent speed control with stroboscopic readout, an oil-damped manual cue system and a hinged, detachable, damped dust cover.

You can experience Lux's very quiet resolution of the quality vs. convenience question at selected audio dealers.

LUX AUDIO OF AMERICA, LTD.
160 Dupont Street, Plainview, NY 11803
In Canada: Lux Audio of Canada, Ltd., Ontario
CIRCLE NO. 35 ON READER SERVICE CARD
In the graph at left, the upper curve represents the smoothed, averaged frequency response of the cartridge's right and left channels; the distance (calibrated in decibels) between it and the lower curve represents the separation between the two channels. The inset oscilloscope photo shows the cartridge's response to a recorded 1,000-Hz square wave (see text), which indicates resonances and overall frequency response. At right is the cartridge's response to the intermodulation-distortion (IM) and 10.8-kHz tone-burst test bands of the TTR-102 and TTR-103 test records. These high velocities provide a severe test of a phono cartridge's performance. The intermodulation-distortion (IM) readings for any given cartridge can vary widely, depending on the particular IM test record used. The actual distortion figure measured is not as important as the maximum velocity the cartridge is able to track before a sudden and radical increase in distortion takes place. There are very few commercial phonograph discs that embody musical audio signals with average velocities much higher than about 15 cm/sec.

Subjective tracking tests with the Shure "Audio Obstacle Course" records confirmed the exceptional performance of the AT25. At 1.2 grams it tracked all the test material on both the ERA III and ERA IV records. The square-wave output from the CBS STR 112 test record was excellent, with only a couple of cycles of low-level ringing at about 25 kHz.

**Comment.** The unusual internal construction and external packaging of the Audio-Technica AT25, together with its very high price, would lead one to expect equally unusual performance. We were not disappointed. Although no single one of the AT25's performance characteristics would by itself necessarily earn it a place at the forefront of cartridge technology, every one of them was at the very least good or excellent. In the aggregate, the cartridge is nothing less than superb. Although the AT25's combined cartridge/head-shell format does restrict its use to arms designed for the universal four-pin plug-in shell, such arms are used in a large number of the world's high-quality record players. In any event, the needs of those who use other types of tone arms should be met very well by a sister cartridge, the AT24.
The inside story of a classic.

Introducing a new type of record cleaner. Meet the CLASSIC 1, the only cleaner of its kind. Developed to satisfy you, the discriminating audiophile.

Neutralizing the static charges that attract and hold destructive microparticles of dust and dirt on your record's surface is one of the major problems in record care.

Ordinary cleaners attempt to reduce static charges by applying fluid directly to the surface of the record or cleaning unit. Direct application of fluid involves an inherent risk of harmful residue build-up and should be avoided except in the case of abnormally dirty or greasy records. In fact, normal maintenance should not involve wetting the record.

At last, the CLASSIC 1 has the answer to safe and effective cleaning. Not only are static charges reduced, but the problem of residue formation is eliminated. Cleaning is safe and effective because inside the CLASSIC 1 is the exclusive MICRO STOR SYSTEM which utilizes a humidification/cleaning process rather than a 'wet' technique.

Discover the ultimate in record care. The CLASSIC 1, a Sound Saver product.

Available at finer audio dealers...
The new Rotel RT-2100 is a de luxe FM-only stereo tuner with such features as a quartz-locked tuning system, dual digital and analog station-frequency displays, selectable narrow and wide i.f. bandwidths, and built-in Dolby decoding circuits.

From its distinctive front-panel styling, the RT-2100 is immediately recognizable as a Rotel product. The long dial scale is calibrated at uniformly spaced intervals of 1 MHz. The large tuning knob, at the lower right of the panel, operates a smooth flywheel mechanism. A small blackout window below the left half of the dial scale displays the signal-strength/multipath-distortion indicator, a bright red digital frequency readout, and several LEDs that provide tuning information and indicate when a stereo transmission is being received. The signal-strength indicator is a horizontal row of seven LEDs which light up in sequence to form a line whose length is proportional to signal strength. When a MULTIPATH button on the panel is engaged, the LEDs are blanked unless there is appreciable multipath distortion, which causes the line length to fluctuate with program modulation.

The digital frequency display is the readout of a counter operated from the continuously tunable local oscillator. When the tuner comes within about 60 kHz of a signal, one of two red LEDs comes on to show which direction one should tune to reach the center of the channel. Within about 8 kHz of the channel center, a green TUNED light comes on and the red lights are extinguished. When the TUNED light is on, releasing the tuning knob energizes the lock circuits, causing a second green light to come on.

In the Rotel quartz-lock system, the nominally 10.7-MHz i.f. signal is compared to a signal from an internal 10.7-MHz crystal oscillator, and any frequency difference shifts the local-oscillator frequency until the two are identical. This gives the RT-2100 the continuous tuning ability of a conventional tuner plus the absolute tuning accuracy of a synthesized tuner. When the tuning knob is touched, the quartz-lock circuit is disabled so that the frequency can be shifted at will. Lever switches on the front panel control the i.f. bandwidth and muting-lock functions (the two are switched simultaneously) as well as the power to the tuner. There are two pairs of audio outputs in the rear of the tuner, one at a fixed level and the other controlled by a small front-panel output-level knob. A similar knob selects the tuner’s operating mode: MONO, STEREO, AUTO (automatic selection of mono or stereo conditions), and DOLBY FM.

The last, in addition to passing the signals through Dolby decoding circuits, switches the tuner’s de-emphasis time constant from 75 to 25 microseconds.

Three small pushbutton switches control the MULTIPATH display, a HI-BLEND for mixing the higher audio frequencies to reduce noise when receiving weak stereo signals, and REC CHECK. The last replaces the regular tuner audio outputs with a 400-Hz tone whose level is presumably internally set to correspond to 50 per cent modulation and can be used to set recording levels. (This presumption is based on the service manual for the tuner: the multilingual operating manual is unclear, if not actually incorrect, in its reference to REC CHECK and several other features.)

The Rotel RT-2100's front panel is slotted for mounting in a standard EIA 19-inch rack and fitted with rugged handles. The overall dimensions are 19 inches wide, 5½ inches high, and about 13 inches deep. The tuner weighs 16.5 pounds. Price: $640.

Laboratory Measurements. We attempted to measure the tuner performance using both narrow and wide i.f. bandwidths, since this can affect its performance in many ways. In the process, we discovered (although it is not even hinted at in the instruction manual) that the bandwidth narrows automatically when the signal level falls below 38 dBf (45 microvolts, or µV) if the front-panel switch is set to WIDE. It can always be changed to NARROW by operating the switch manually, but if the input signal is weaker than 38 dBf, the bandwidth is narrowed regardless of the switch position.

The HF usable sensitivity was 11 dBf (2 µV) in mono, and the stereo sensitivity was set by the switching threshold at 23 dBf (7.5 µV). The 50-dB quieting sensitivity was the same as the usable sensitivity in mono. With total harmonic distortion plus noise (THD + N) of 3.2 per cent. In stereo the 50-DB quieting sensitivity was 35 dBf (30 µV) with 0.5 per cent THD + N.

At an input of 65 dBf (1.000 µV) the mono distortion was a very low 0.07 per cent with wide i.f. bandwidth and 0.16 per cent with narrow. In stereo, the distortion was 0.11 per cent (W) and 0.17 per cent (N). The signal-to-noise ratio (S/N) at a 65-dBf input was 74.5 dB in mono and 68 dB in stereo with either wide or narrow bandwidth.

The capture ratio and selectivity were functions of i.f. bandwidth (surprisingly, the AM rejection was not affected by the bandwidth). The capture ratio at 45 dBf (100 µV) was 1.53 dB (W) and 1.8 dB (N). With a 65-dBf input, the readings were 1.22 dB (W) and 1.33 dB (N). The AM rejection was a very good 70 dB measured at either input level and with either bandwidth.

The alternate-channel selectivity with narrow bandwidth was a very good 87 dB, and the adjacent-channel selectivity was 9.5 dB. Since the alternate-channel selectivity had to be tested with a small input (our generator's maximum output of 200,000 µV prevented us from starting with a "desired" signal at the preferred 45-dBf level), we were unable to switch the tuner to wide for alternate-channel selectivity measurements (this was the point in our tests where we discovered the automatic bandwidth-switching feature). However, adjacent-channel selectivity could be measured at a higher input level, and it changed to 4.9 dB at the wide bandwidth.

The stereo and muting thresholds were identical at 23 dBf (7.5 µV). The tuner hum level was -68 dB, and the pilot-carrier leakage was a very low -80 dB. The signal-strength indicators had a peculiar characteristic, with the lowest one coming on at an input of 32 to 35 dBf (about the weakest signal that one might be able to receive with full fidelity in stereo) and the highest one coming on at 43 dBf. The practical effect of this was that all (Continued on page 60)
FROM PICKERING

The New Shape of Sound

THE STEREOHEDRON SERIES

From one of the oldest names in sound development comes the latest sound innovation... the Stereohedron Stylus tip... with expanded contact area for truest fidelity. And now it's available from Pickering in three great cartridges. The critically acclaimed XSV/3000, the new XSV/4000 with expanded frequency response range, and the ultimate in lightweight compliance, the Pickering XSV/5000 which captures all the high frequency information contained in today's finest recordings... creating a whole new experience in recorded sound.

© 1979 PICKERING & CO. INC

PICKERING "for those who can hear the difference"

101 Sunnyside Blvd., Plainview, N.Y. 11803

CIRCLE NO. 41 ON READER SERVICE CARD
the lights were on for virtually every receivable station in our area, rendering the display useless for anything but multipath indication. (It is probable that an internal adjustment would correct this, since the service information claims a range of 65 dB.)

Fortunately, and to the credit of the tuner, its multipath-distortion indicator was one of the most effective we have used, and we found it most convenient to leave the switch set to multipath and adjust the antenna for an absence of glowing lights. The REC CHECK signal level corresponded to a 57 percent modulation level. It is internally adjustable and is probably close enough to 50 percent to be useful when setting recording levels.

The stereo performance of the Rotel RT-2100 was impressive. The frequency response was +0.7, -0.2 dB from 30 to 15,000 Hz, and the channel separation over that range was unusually uniform. With the wide bandwidth, it was 45 to 47 dB at middle frequencies, exceeded 40 dB from 65 to 9,000 Hz, and was still 34 or 35 dB at 30 and 15,000 Hz. The narrow i.f. bandwidth had little effect on the separation, which was about 40 dB from 100 to 1,000 Hz and 32 to 33 dB at 30 and 15,000 Hz.

Comment. Tuning the Rotel RT-2100 is exceptionally easy and noncritical. The tuning lights are totally unambiguous, and the lock circuit makes mistuning impossible. Although we tended to use the digital frequency display when tuning the RT-2100 (its location next to the tuning lights makes that most logical), the analog dial scale was very accurate and could have been used with equal success.

The Allison Electronic Subwoofer is a novel and effective answer to most speaker systems, whether active (with built-in amplifiers), passive (with a separate power amplifier), or dipolar speaker system or with miniature sealed speakers that have limited power-handling ability.

When properly employed, the Allison ESW can extend the already substantial bass response of an Allison speaker down to 20 Hz with an essentially flat characteristic. This sort of performance is rarely obtained even with properly functioning subwoofers; many of those that do go down to 20 Hz (and by no means all of them do) are not necessarily "flat," since their level balancing depends on the judgment of a listener working with program material that is as much felt as heard.

The boost applied by the Allison ESW begins at about 50 Hz and reaches its maximum at 20 Hz. The response drops off rapidly at frequencies beyond that. The maximum boost supplied by the ESW is from 11 to 14 dB. This places extra demands on the power amplifier as well as on the speaker, since the amplifier may have to deliver more than twenty times as much power at the lowest frequencies as it would without the ESW.

In addition to (or instead of) its equalizing functions, the Allison ESW is an unusually effective audio "bandpass" filter. With the bass equalization active, the response drops at 24 dB per octave below 20 Hz and at 18 dB per octave above 20,000 Hz. The ESW can also be used in a FILTER ONLY mode, giving a flat response from 20 to 20,000 Hz and cutting off at a rate of 36 dB per octave below 20 Hz and 18 dB per octave above 20,000 Hz.

The only operating control on the ESW is a TOUVER FREQUENCY knob, with settings for FILTER ONLY and three different woofer resonance frequencies (35.5, 41, and 48 Hz), corresponding to those of the various Allison speaker models and closely matching those of some other popular acoustic-suspension systems. The switching operations within the ESW must be more complex than they appear to be on the surface, since Allison uses a digital-logic system instead of straightforward mechanical switching. There is also a toggle switch that replaces the amplifier's tape-monitor switch when the ESW is installed in the tape-recording loop (it can also be connected between the preamplifier and the power amplifier).

In spite of its apparent simplicity, the circuitry of the Allison ESW is quite sophisticated. Its active filters employ wide-band BIFET "op-amps" capable of a 13-volt-per-micosecond slew rate and having a 50-kHz power bandwidth. The specifications of the ESW are printed in some detail in the instruction booklet, but it can simply be considered as a noiseless, distortionless device when connected to a music system. It has unity gain and a rated noise level (A-weighted) better than 93 dB below 1 volt. The distortion is less than 0.1 percent throughout the audio range under any normal operating conditions.

The Allison Electronic Subwoofer is a very compact unit—14% inches wide, 4% inches deep, and 1 1/4 inches high—and it weighs a mere 2 pounds, 5 ounces. It draws only 2 watts from the 120-volt a.c. power line and can be left on continuously or switched by the amplifier. It is designed so that no switching transients reach its outputs. It is finished in charcoal grey. Price: $290.

Laboratory Measurements. We measured the electrical performance of the Allison ESW by itself and also the acoustic output of a pair of Allison:Four speaker systems driven through the ESW. Listening tests were also carried out using these speakers.

The frequency response of the Allison ESW varied less than 1 dB overall between 20 and 20,000 Hz in the FILTER ONLY mode. The low-frequency response was down 36 dB at 10 Hz and better than 60 dB at 5 Hz compared with the 20-Hz level. Above 20,000 Hz, the (Continued on page 62)
The Rare Receiver.
It destroys the separate amp and tuner mystique.

Optonica's new Rare Receiver (SA-5905) combines all the technology that makes separates superior. With the convenience, specs and exclusive features you won't find on any other receiver.

The Rare Receiver gives you all the power you could ever want, an amazing 125 watts per channel RMS at 8 ohms from 20Hz-20kHz. With amazingly low distortion: 0.02% THD. And 75dB S/N ratio (stereo).

And to insure that none of that power gets lost, there's Optonica's exclusive three stage Delta Power. Giving you separate power supplies to prevent excessive power drain and further reduce distortion.

The Rare Receiver gives you unlimited versatility too. You can use it like a separate amp and tuner, just by flicking a switch.

Our exclusive 5-way blowout protection is the most complete fail-safe system we know of. Because your precious equipment needs all the protection it can get.

The Rare Receiver also gives you all the "standard" features you'd expect on ordinary receivers. And some you wouldn't. Like a 41-position detented volume control and midrange tone control.

But to appreciate what makes our Rare Receiver so rare (including our other exclusive features), you've got to see and hear it for yourself.

To enjoy that rare experience, call our toll free number: 800-447-4700 (in Illinois 1-800-332-4400). Or write us at 10 Keystone Place, Paramus, N.J. 07652, for the Optonica dealer nearest you.

Why settle for mystique, when you can own something rare?
The IHF standard termination of 10,000 ohms response fell to -3 dB at 30,000 Hz and -13 dB at 50,000 Hz. The gain was unity with a high-impedance termination and -0.4 dB with the IHF standard termination of 10,000 ohms in parallel with 1,000 picofarads.

The boost characteristics of the ESW closely matched the curves shown in the Allison specifications. The A-weighted noise level was below our measurement capability of -80 dB referred to 1 volt. The harmonic distortion at 1,000 Hz rose from less than 0.002 per cent at 0.1-volt output to 0.0045 per cent at 1 volt and 0.008 per cent at 2 volts. At 20 Hz, the distortion was 0.016 per cent at 0.1 volt, decreasing to 0.0032 per cent at 0.3 volt and 0.005 per cent at 1 volt. At 16,000 Hz (which we used instead of the usual 20,000 Hz so that we could measure the third-harmonic distortion level on our spectrum analyzer), the distortion rose linearly from 0.013 per cent at 0.1 volt to 0.1 per cent at 1 volt and 0.2 per cent at 2 volts. The output clipped at 3.6 volts at all frequencies.

The effect of the ESW on the bass output of the Allison:Four (a compact speaker system with a single 8-inch woofer) was dramatic. Without the equalizer (FILTER ONLY), the close-miked response of the woofer was up 2.5 dB at 65 Hz and fell off at 12 dB per octave to -16 dB at 20 Hz. The "B" position of the equalizer (for a 41-Hz woofer resonance) is recommended for use with the Allison:Four in a normal installation. With it, the acoustic output of the speaker was flat within +3, -2 dB from 20 to 200 Hz. As a matter of interest, we also measured the overall frequency response of the speaker (which was tested and reviewed in Stereophonic Review in June 1978). With the aid of the ESW, the combined frequency response was within ±4 dB from 20 to 20,000 Hz. Quite impressive for a bookshelf-size speaker in the $200 price range!

Comment. Allison states plainly that most of the time the ESW will make no audible change in the output of a music system (the same is true of any genuine, properly adjusted subwoofer). If the program material does not have substantial content below about 40 Hz (and most of it does not) there is little or no benefit to be derived from using the boost of the ESW. However, its filter action is superb—it completely removed infrasonic rumble from the amplifier and speakers, releasing the formerly wasted power for generating useful program output. Also, the reduction in ultrasonic energy afforded by the filter should prevent even the most TIM-prone amplifier from generating that form of distortion.

We used the ESW with a 200-watt-per-channel amplifier to drive the Allison:Four speakers. As expected, 99 per cent of the time there was no audible change when switching from FILTER ONLY to one of the boost positions, even when the program seemed (to have a lot of deep bass (appearances can be deceptive). The best demonstration we found for the ESW was a recording of the Hammond Castle pipe organ, made by Richard Burwen and released by Decibel Records. It has enormous energy in the 20-Hz region, much of which is lost when played through ordinary speakers that cut off at 30 Hz or higher.

Our experience with this record (and a few others) left us with admiration and respect for the little Allison:Four, whose woofers could absorb almost the full output of the 200-watt amplifier at 20 Hz before their cones rattled out a plea for mercy! The bass output was, of course, completely out of keeping with the size of the speakers, being of the room-shaking and foot-tangling variety, though not as loud as one would get from a good larger-woofer system.

Another characteristic of the ESW technique when it is used with special sources such as the Decibel record is that the average volume must be set very low, to a barely audible level. To listen to the organ at a more normal level was to invite disaster when the low pedal notes came on at full force, driving the amplifier to its full power and beyond. As a rule, the amplifier fuses blew almost simultaneously with the sounds of distress as the speaker cone reached its excursion limits, and we eventually learned to keep the volume control well below its normal settings.

Allison implies, though without stating it in so many words, that unless the program really does have content in the bottom audible octave, one is better off using the FILTER ONLY setting of the ESW. And it is worth noting that you should not expect the ESW to help any FM broadcast or the majority of commercial records and tapes. Our experience with the Allison ESW suggests that it would be a mistake to try to use it with any amplifier rated at less than 100 watts. Our 200-watt-per-channel unit was barely adequate for a 15 x 20-foot listening room. The average power could be well below 1 watt, barely moving the meters on the amplifier, but a crescendo plus the boost could easily overdrive both the amplifier and the Fours. If both were larger, there would be no such problem.

In closing, we can say that the Allison Electronic Subwoofer, with the appropriate amplifier and speakers, can probably equal or surpass the performance of many, if not most, of the separate "subwoofers" we have seen. One of the chief advantages of the Allison approach would seem to be its compactness. Not every listening room can hold one or two large subwoofer commodes, but an Allison ESW can be tucked away anywhere. Although $290 is quite a sum to pay even for the best audio bandpass filter we have seen, that can be considered a bonus feature of the ESW. And we cannot imagine getting the kind of bass output we extracted from the Allison: Four speakers from any conventional systems selling for the combined price of the Fours and the ESW (roughly $700).
Earphones are made for ears. Yours. That's why the Beyer DT 440 has sound so natural and is so light and comfortable you don't even know it's there, even after many hours.

At 9.6 ounces, it is one of the lightest headphones available. And its weight is evenly distributed among the sponge-padded ear-cups and air-filled headband.

There's no great weight suspended from your head, and your ears never get squeezed.

Some people complain about the isolation of headphones that close them off from the world. So we built the DT 440 with a high velocity open design, to allow a natural mixture of recorded music and environmental sound.


For sound—and for comfort—nothing beats a Beyer. We'd like to make one for you.
As classical music passed from the nineteenth century into the twentieth, a lot of seemingly irreversible things happened to it, not the least of which was a virtual revolution in what a given piece of music was to be called. The poetic subtleties of the Romantics were the beginning of it, but the generic titles, even when they were not actually given (as was the case with most symphonic poems), were implicit and understood. We continue to have symphonic poems, sonatas, Masses, preludes, and the like even today, and people continue to feel as comfortable with the names they ever did, though some of the meaning has gone out of them. But what would an earlier time have thought of a piece called a "casual development" (Henry Cowell), an "engrani" (Arthur Cunningham), a "sarcasm" (Serge Prokofiev), or a "figment" (Barbara Kolby)?

The eighteenth century knew pretty well what to expect from any new composition called "partita," or "symphony," or "sonata da camera." Such generic terms represented specific forms and styles of music, and even when the composer made a departure from the expected, it was comprehensible to the audience as a departure. It was the same earlier. Even such an exotic (to us) title as Missa L'Homme Armé was perfectly understandable to contemporaries of Josquin des Prez; it was a Mass, and everybody knew what a Mass was, and it was based musically on the song L'Homme Armé, and almost everybody who knew anything about music knew what that was. But a fifteenth-century man would not know what to expect from any piece called a "zone" (Max Schubel), a "phonemen" (phonemeography)—Milton Babbitt), a "tangent" (William Bergsma), or an "excursion" (Samuel Barber), and, frankly, neither do we.

What we have here is a severe case of separation of the "what you see" from "what you get," and I wonder if it hasn't added to the difficulties many listeners seem to have with twentieth-century music. It isn't that listeners are averse to poetic titles; they rather favor them, as anyone who has ever compared the sales of titled Beethoven sonatas with those of untitled ones can attest. But people expect a title to tell them something of importance or interest about the music they are about to hear, and I wonder what musical meaning is conveyed by such names as "gravities" (Richard Felciano), "infinities" (Meyer Kupferman), "alternances" (Makoto Shimohara), or "news items" (William Mayer), whatever the quality of the music subsumed by them.

Probably Satie was to blame. It would not be the only one of his jokes to have had serious repercussions. But Debussy was at fault too. "Prélude" was okay, and "étude" was virtually rear-guard, and one can always get away with "suite," no matter what precedes it. But "images" (pictures) was an invitation to trouble (with Moussorgsky too), and "estampes" (prints) has led to a whole gallery of graphicisms: "fine drawings" (Leo Kraft), "silhouettes" (Nicolas Slonimsky), "pastels" (William Mayer), "aquarelles" (watercolors, Francis Chagrin), "graficos" (prints, Maurice Ohana), "incisioni" (engravings, Vittorio Rieti), "woodcuts" (Jan Kapr), and even Fifteen Prints after Durer's "Apocalypse" (Lubos Fiser), culminating in that currently "in" word for original prints, "multiples" (Richard Mory).

Would you say that there was something of a search for the exotic going on here? I would. Some composers seem to seek it through the use of outmoded musical terms, such as "tropes" (Niccolo Castiglioni), "cadenza" (Robert Hughes), "biconia" (Anthony Laneacone), and "sequences" (Luciano Berio), risking, perhaps, a certain misunderstanding thereby. Of course there can be no misunderstanding at all about a title like Cybersonic Canivelettes (Gordon Mumma). That can mean only a piece of modern music of a certain sort—unless it refers to a steel sculpture of a bridge partly supported by sound waves. But that we've learned only through experience. The tendency has been, all along, to call music by nonmusical names—artistic, literary, scientific—perhaps in the hope of making it more palatable.

It seems to me, though, that someone is missing a bet here, for surely there are more appetizing titles to be found than most of those cited above. "What shall we listen to tonight, dear, Three Cucumbers for Piano Solo?" "No, I'm in the mood for something more substantial. How about Five Filet Mignons, Rare, with Garlic, for Brass Choir and Double String Orchestra, Hold the Potato?"
fact:
we've put a NEW plus
into the Super-Track Plus
family of V15 Type III Cartridges

Hyperelliptical tip for
audibly greater freedom
from distortion

One of the critically acclaimed developments
introduced in Shure's incomparable V15 Type IV
phono cartridge is its revolutionary distortion-reducing
Hyperelliptical nude diamond tip. It established a new
standard of sound purity through a dramatic reduction
of both harmonic and intermodulation distortion. Now,
the Hyperelliptical tip is also available in the world-
famous V15 Type III Super-Track Plus Cartridge,
bringing together the sound purity and flat response
of the IV at an eminently affordable price. It is truly
second only to one other cartridge in the world—the
V15 Type IV.

V15 TYPE III-HE
Stereo Dynetic® Phono Cartridge

If you
already own a
V15 Type III
you can upgrade it!

If you are one of the thousands of
audiophiles who already own a V15 Type
III, you too can benefit from the new
freedom from distortion afforded by the
Hyperelliptical stylus. Simply replace your
present stylus with the new VN35HE
improvement stylus. It will give your Type
III cartridge the same specifications as
the new V15 Type III-HE. The cost is
extraordinarily low, yet the difference in
sound will be immediately apparent. Takes
only seconds to install (see illustration),
requires no tools whatsoever.

V15 TYPE III-HE IMPROVEMENT STYLUS

Shure Brothers Inc., 222 Hartrey Ave., Evanston, IL 60204, In Canada: A. C. Simmonds & Sons Limited
Outside the U.S. or Canada, write to Shure Brothers Inc., Attn: Dept. JB for information on your local Shure distributor.
Manufacturers of high fidelity components, microphones, sound systems and related circuitry.

CIRCLE NO. 57 ON READER SERVICE CARD
SECOND-GENERATION ROCK

A FEW months ago, as I was sorting through yet another pile of new pop records sent to this office for review, Music Editor Jim Goodfriend, my boss, asked rather plaintively, "Do we have to review so many second-generation rock bands?" I knew just what he meant. Something inside me rolls over and goes to sleep at the mere thought of groups like Foreigner and Toto, groups that are technically proficient, enormously popular, and totally devoid of originality. They are the craftsmen of rock, masters of the recycled riff and the thrice-familiar lyric, all produced, performed, and recorded to a fare-thee-well.

Their music is functional, of course. It keeps a lot of people entertained, and it fills the airwaves, fills the concert halls, and fills the record companies' coffers. Despite fans' claims to the contrary, such music just ain't Art, it's Craft. But it's also too ubiquitous to be ignored. In the twenty-five years that rock-'n'-roll has been with us, bands that make this kind of music have increased in number and have carved out for themselves a spacious gold- and platinum-lined niche in the music business.

What Jim Goodfriend means by "second-generation rock" has less to do with chronology, I think, than with approach. That is, a band is not "second-generation" simply because it has been recently formed, but because its talent is limited to a facile reshuffling of elements other musicians have discovered or created before them. A band like Dire Straits, although newly formed and also dependent on the same musical elements, escapes the second-generation label by reshaping these aural elements to create a distinctive, original sound.

Once the question was raised, I decided to do little research into the background and psychology of a second-generation band. Part of the research was an interview with Tycoon, a better-than-average group of this kind, and it proved to be an interesting example. Technical proficiency seems to be almost taken for granted. All six members of Tycoon have served a more extensive apprenticeship than the usual knocking about in garage and bar bands that almost all rock musicians have experienced as kids.

"You sort of have to have a Ph.D. in rock-'n'-roll to get here," Tycoon bassist Mark Kreider said. Originally trained in classical music, Kreider switched to rock and worked for years as a session man for the likes of Johnny Winters and Aerosmith. Lead vocalist/guitarist Norman Mershon played professionally in bands from the age of thirteen and spent the last several years as stage manager and assistant engineer at the Record Plant. The other members of the group are all similarly experienced.

"But no one had actually done his own album as the spearhead of a band," Mershon said. "Each of us had always been more or less in a supportive role. At some point we realized that instead of helping other people get their sounds together, we could do it for ourselves."

The sound they got together was a calculated amalgam, as it usually is the second time around. "We had firm parameters when we began," Gershon continued. "We wanted a vocal band with nice melodies and a good beat." Their first album, "Tycoon" (Arista 4215), was an impressively professional debut and immediately spun off the hit single Such a Woman.

That's another trait of second-generation bands: commerciality. A good record-company a- &- r man can hear those nicely reshuffled licks that bring in the cash from a mile away. Even before Tycoon's demo tape began the regular round of submission to various record companies, an a- &- r man with prescient ears crashed a rehearsal and liked what he heard.

The word spread, the demo circulated, and a feverish courtship began. Within one week, interviews with eager executives from A&M, Atlantic, and Arista were scheduled three days in a row.

"It was amazing—a triple-A week," Ger- shon said. "We never even got to the Bs and Cs in the music business."

No matter what its position in the alphabet, a record label is likely to find the second-generation band even more attractive now that the industry's big boom period seems to have ended. Even more than in past years, surefire acts will dominate the industry's output in the early Eighties, so you can count on a steady flow of rehashed rock (and, of course, disco) to amuse you on the road to 1984. Have a nice trip.
ADC has four Sound Shaper® frequency equalizers that will improve your sound system. No matter how good it is. And at a cost that’s lots less than trading in your components.

ADC Sound Shapers will improve your speakers. By extending the true bass response, including the critical mid bass.

ADC Sound Shapers will improve the relationship between your cartridge and speakers. From one of partial incompatibility to total compatibility.

They’ll also eliminate rumble (low frequency overload), tape hiss and record scratches.

And that only scratches the surface of what ADC Sound Shapers can do. For instance, the walls, carpeting and furniture of your listening room physically bounce sound around so that some spots have less sound than other spots.

Lots less. ADC Sound Shapers will bring these “dead” spots to life.

Perhaps best of all, though, is a Sound Shaper’s ability to let you re-equalize what a recording engineer mixed. If a horn section is overwhelming a piccolo, for example, you just slide the appropriate frequency lever. Presto, more piccolo. You can also vanquish a voice. Or boost a tuba.

Sound Shapers segment the entire spectrum of sound. To let you re-shape a sound track to your personal musical preferences. It’s all the control you’ve ever dreamed of but never dreamed possible.

To get into equalizers, start with our Sound Shaper One which operates in five frequency ranges. Or our Sound Shaper One Ten which gives you greater control by operating in ten frequency ranges.

For more professional equalizers, there’s our Sound Shaper Two Mk II which functions in twelve frequency ranges with a two-channel LED meter. And there’s our new Sound Shaper Three Paragraphic™ Equalizer.

It combines all the advantages of a graphic equalizer with all the advantages of a parametric equalizer. Twelve primary frequency controls per channel. Plus twenty-four ancillary control positions per channel. The Sound Shaper Three is the ultimate in controlling and creating with your stereo system.

Take the ultimate step up in sound, without trading in a thing.

ADC Professional Products, a division of BSR Consumer Products Group, Route 303, Blauvelt, NY 10913. Distributed in Canada by BSR (Canada) Ltd., Ontario. *Sound Shaper is a registered trademark of Audio Dynamics Corporation.
Bravo indeed for the superlative performance of the 60 watt Jensen R430 Car Stereo Receiver. The top-of-the-line of six receivers that boast a compliment of features found only on better home receivers.

Features like a separate trunk-mounted Power Amplifier unit as well as a twin amplifier section in the main unit.

The advanced Bi-Amp capability of the R430 makes it possible to selectively send high frequency power information to a car's front speakers, and low frequency info through the Power Amp to the rear speakers. This bi-amplification allows for greater volume and less distortion.

Jensen has refined the R430 with other unique features like feather-touch electronic switches. And an automatic tape alarm.

Dolby® Noise Reduction processes out tape hiss and improves the dynamic range of Dolby-encoded tapes and FM broadcasts.

A Fader control adjusts levels front to back; separate Balance control adjusts left to right. There's even a Loudness Compensation function and for the extra-sensitive FM tuner, Interstation Muting.

But all the features in the world don't mean a thing if they don't combine to do one thing a receiver is built to do...recapture and deliver to you all the power and intensity that went into the original performance.

That's the thrill of being there.

That's the Jensen R430 Car Stereo Receiver.

JENSEN

The thrill of being there.
A brand-new generation of low-end loudspeakers has come along just when they're needed to reproduce the low frequencies built into recent recordings

SUBWOOFERS

By Peter Mitchell
In recent years speaker manufacturers have given a great deal of attention to a new product category: the "subwoofer." Subwoofers are used (with some overlap) in two ways:

1. The true "subwoofer," as its name suggests, is a loudspeaker intended to reproduce the lowest audible frequencies, particularly the octave or so below the useful output of the woofers in most conventional "full-range" speaker systems. Since most popular speakers are effective down to around 40 to 60 Hz, the essential operating range of the subwoofer would extend down from that range to 30 or even 20 Hz. Thin-panel loudspeaker systems with electrostatic, planar-magnetic, or other specialized drivers (see "Exotic Loudspeakers," Stereo Review, August 1978) typically have dipole radiation patterns which suffer from front-to-back cancellation of the bass frequencies. With these, a subwoofer can be used to cover the range below about 100 Hz.

2. Another "subwoofer" application is as a complement to "mini" speakers. Many of these, less than a cubic foot or so in volume, provide startlingly good performance and are easy, because of their small size, to accommodate in terms of decor (see "Nineteen Minispeakers," Stereo Review, August 1979). Since their sole fault is limited bass output, there is a trend toward assembling three-piece speaker systems in which two small "satellites" are combined with a floor-installed woofer module or "bass comode." (These bass units are often referred to as "subwoofers"; properly speaking, however, this designation should apply only to those with an unusually extended deep-bass response.) Typically, the crossover between the bass comode and the satellite speakers is set at around 200 Hz. This means that the entire bass output is handled by the bass comode, and the satellites provide all frequencies from the lower midrange up. While the primary emphasis in this article will be on the use of subwoofers (and other means) to reproduce the lowest musical frequencies, many of the principles and comments apply as well to the use of bass modules with small satellites.

Program Material

To begin, let us look at the scarcity of very low bass frequencies in recordings, and then at the difficulties that arise in reproducing them when they do occur. When Telarc's first digitally mastered recording (featuring Frederick Fennell conducting the Cleveland Symphonic Winds in music by Holst and Handel) was released last year, many purchasers were startled to find inside a blunt notice warning of possible woofer damage from the rather vigorous bass-drum thwacks that occur at several points in the recording. In a similar vein, the jacket notes for Crystal Clear's "The Fox Touch," a direct-to-disc recording of Virgil Fox at the pipe organ, included advice about fusing one's loudspeakers to protect them from overdrive by the powerful low pedal tones on the record. These and a few other discs have become audiophile spectacles, favorites for showing off the low-end response of those stereo systems that can handle such signals without breakup.

Why are such low frequencies rarely present at a high level—or even at an audible level—in recordings? Why is it that records so rarely embody the natural balance of low-frequency energy in musical sound? The answer is a complex one, for there are actually quite a number of points in the recording process where deliberate, inadvertent, or unavoidable bass losses can occur. For example, whatever deep-bass energy the microphones pick up may be intentionally removed by filtering. In concert-hall recording this is done to remove "room rumble" caused by floor vibration stimulated by subway trains, elevator motors, air-conditioning compressors, and nearby street traffic. Such rumble is usually too low in level to be audible, but it tends to be recorded at an exaggerated level by direct conduction to the microphones via their stands. Again, in studio recordings of popular music, low-cut equalization is often applied to bass-drum and bass-guitar tracks in order to produce a crisp, "tight" sound that has its maximum energy levels in the 60- to 100-Hz range. In addition to being popular, this kind of sound has the practical advantage of being able to produce a strong, punchy, high-volume impact without requiring either excessively large record-groove modulations or woofer-cone motion.

Even more deep-bass loss is likely to occur during the disc-cutting process. There are some mastering engineers who cut records with extended bass response (or attempt to), but the more common practice is to use a "blend-and-cut" filter. At low frequencies, the two channels are blended into mono in order to avoid large vertical modulation patterns which suffer from front-to-back cancellation of the bass frequencies. With these, a subwoofer can be used to cover the range below about 100 Hz. If so are often filtered out because the lower the frequencies the larger the groove modulation cut into the record, and thus the less the available playing time (successive grooves have to be spaced farther apart to accommodate large groove wiggles). Of course, with many of today's recordings, this excuse for low-end limiting doesn't apply, since playing time is generally planned to be under 20 minutes anyway. The consequences of not making this trade-off between bass level and playing time is illustrated by a recording I found in Japan: a "Stereo Laboratory" remastering of the London recording of Solti conducting Berlioz's Symphonie Fantastique. Normally this 53-minute work is squeezed onto two sides of one disc, but here it was extravagantly spread out over four sides ranging from 8 to 15 minutes in length; the two-disc set retails for 56,000 yen, or about $26. In truth, the bass does sound cleaner, fuller, and less limited; but is the improvement sufficient to justify the extra cost? Meanwhile, back in the U.S., CBS has just installed a new "Discomputer" system in its cutting rooms, to be used in mastering both Columbia records and those of other labels that use CBS' disc-pressing services. This system "previews" the signal on the master tape before cutting begins, analyzing both signal amplitude and phase in order to insure optimum handling of the groove-modulation levels and more efficient groove spacing. The intention, of course, is to resolve the conventional conflict between bass-modulation levels and playing time.

What's Down There?

When the sound of a stereo system whose speakers roll off below 50 Hz is compared with that of a system that is flat down to 20 Hz, the most impressive thing about the comparison is how little difference it makes—most of the time. (Those subwoofers that produce a dramatic effect when they are switched in are usually found to be boosting the mid-bass range—say, 50 to 100 Hz—in addition to whatever they provide at
Once you have heard the lowest octave reproduced correctly, you may not want to live without it.

Deep-bass Reproduction

The lowest audible frequencies are the most difficult and hence the most costly to reproduce. The problem is aggravated by the nature of human hearing. It is well known that at all levels the ear requires more bass energy than midrange or treble octave of the musical spectrum at a realistic loudness level without muddying up the sound with excessive boost of the middle-bass frequencies above 80 Hz or so. That is why a conventional bass tone control—or even an octave-band equalizer—won't do the job.

Deep-bass Reproduction

The lowest audible frequencies are the most difficult and hence the most costly to reproduce. The problem is aggravated by the nature of human hearing. It is well known that at all levels the ear requires more bass energy than midrange or treble octave of the musical spectrum at a realistic loudness level without muddying up the sound with excessive boost of the middle-bass frequencies above 80 Hz or so. That is why a conventional bass tone control—or even an octave-band equalizer—won't do the job.

The greatest difficulty in deep-bass reproduction is imposed by those physical laws that govern the behavior of loudspeakers. Let's assume that you have a conventional loudspeaker system, of either acoustic-suspension or vented design, whose response is reasonably flat down to 40 Hz. In order to provide it only occasionally. Striking the lowest keys on most pianos elicits only upper harmonics; the fundamental is too weak to provide it only occasionally. Striking the lowest octave only very occasionally.

Owning a subwoofer is a little like owning a symphony can be immensely satisfying. But we want to present the bottom octaves of the musical spectrum at a realistic loudness level without muddying up the sound with excessive boost of the middle-bass frequencies above 80 Hz or so. That is why a conventional bass tone control—or even an octave-band equalizer—won't do the job.

We may not want to live without it.
make that loudspeaker flat down to 20 Hz, the size of the speaker's cabinet would have to be increased by a factor of eight, or else its efficiency would have to be reduced by a factor of eight, necessitating an eightfold increase in amplifier power to drive it. Since the same physical laws apply to subwoofers as to bookshelf speakers, flat response down to 20 Hz or below is a rare and expensive commodity. A sensible compromise is to make the system flat to 30 Hz; this requires a box only about two and a third times larger than normal—still a practical size for living-room use—and gives usable response down to the 20- to 25-Hz range.

The actual response that you will get from a given subwoofer depends, as it does with a full-range speaker, on your listening room. Loudspeaker systems designed for flat response to 20- to 25-Hz range.

Loudspeaker systems designed for flat response to 20- to 25-Hz range. When low-frequency sound waves strike the walls, only part of the energy is reflected back into the room to sustain the sound field; the rest, in effect, passes through the walls and floor (perhaps to reappear in your neighbor's apartment). The response of a woofer or subwoofer is also dramatically affected by the acoustical properties of the listening room, a subject that could easily take up an article or two of its own—and has.

Subwoofers employ assorted design principles: acoustic-suspension, passive-radiator, slot-loading, transmission-line, etc. As with conventional speakers, the design used is less important than how well the design is executed. There are good and bad loudspeakers of every type, and over most of their operating range well-designed speakers of all types should yield equally satisfactory results.

One or Two?

Subwoofers are rather expensive luxuries, and so the option of buying just one instead of two is appealing. Indeed, many of the currently available subwoofers are explicitly intended for "common-bass" use. Such systems employ "matrixing" crossovers, a woofer with dual voice-coil windings, or even two or four woofers in the same cabinet—all of which schemes are intended to provide the bass of both channels from one enclosure while maintaining stereo separation for the midrange and treble frequencies. Common-bass reproduction works because the human ear is insensitive to the direction from which very-low-frequency tones arrive. We localize bass-drum or bass-viol sounds by focusing on the "attack transient" that begins each note; this works because such transients contain overtones at midrange frequencies. But when very-low-frequency sounds are heard, it is very difficult to pinpoint their origin in space with certainty, especially in the semi-reverberant environment of a living room. So it is assumed that we can safely relegate the low frequencies below 200 Hz or so to a separate box and locate it anywhere—even behind the listener—without noticeably affecting stereo localization. (Continued overleaf)

stores the solid impact of the low-bass frequencies that are rolled off in many recordings.

However, there is an important limitation affecting all such schemes for electronically boosting the bottom end of recordings and loudspeakers. At those moments when the boosted low frequencies are being reproduced, increased power demands are being made on your amplifier, so you may not be able to play music quite as loud as usual before encountering amplifier clipping. And the lower frequencies require dramatically increased woofer excursion; to reproduce a 30-Hz tone, a woofer must move four times as far as it does when reproducing a 60-Hz tone at the same level. Electronic bass boost works well when the woofer cone's excursion capacity is not already being fully exploited under normal conditions. And in many cases the use of an infrasonic filter provides a compensating saving (in amplifier power and cone excursion) that is wasted by a non-filtered system. But you should be alert to the possibility that bass equalization may cause you to reach—or exceed—the safe excursion limits of your woofer. Do not assume that such equalization will permit you to produce the sound-pressure levels of a disco with a couple of 10-inch woofers. You will only succeed in making the voice coils clatter against the magnet structures, and the resulting damage is likely to be considered abuse not covered by the manufacturer's warranty. The object of electronic bass equalization is to bring the deep-bass frequencies in music up to equality with the rest of the musical spectrum—not to blow out windows. And when you play some of the recent direct-to-disc or digitally mastered recordings that have unusually strong deep bass in their grooves, be alert to the possible need to cut back the equalization in order to avoid overdriving your woofers.

Bass equalization is not a new idea, of course. Bose and Electro-Voice are among the manufacturers of speakers whose bass performance is achieved by a special complementary equalizer supplied with the speakers. Some of the subwoofers in the accompanying listing also have built-in amplifiers carefully designed to work with the specific characteristics of the drivers and enclosures they are intended for. And a new series of KHL speakers employs an "analog bass computer," an equalizer with a built-in excursion limiter that automatically limits the boost whenever the signal would exceed the woofer's safe operating range.

If you have noticed that disco records played at home don't have the belly-whumping impact you feel at your neighborhood dance parlor, it may not be just the difference in loudness that you're hearing—or even the result of the disco's having perhaps twenty square feet of woofer cone operating while you are making do with a mere two square feet. These are important factors, but another part of the difference may be due to the disco's use of a device called the Boom Box (made by dbx; it's also available in a version for home use, the dbx Model 100 subharmonic synthesizer—$200). As noted earlier, limitations of the disc medium make it difficult to cut high levels on records at very low frequencies. The subharmonic synthesizer detects signals in the 55- to 100-Hz range, assumes that they are the second-harmonic overtones of low-bass fundamentals rolled off when the record was made, and synthesizes those "fundamental" signals in the 27- to 55-Hz range, and adds them into the sound at a level set by a front-panel control. The result is a dramatically solid low-bass punch for recordings of all sorts of music. When added with discretion and taste, the synthesized deep bass seems surprisingly natural even with classical music—though you have to be tolerant of those occasions when it creates "fundamentals" that never existed. Adding a rumbling quality to a baritone voice or introducing a growling bass-fiddle line under the cello in a string quartet. On these occasions the unit's bypass switch comes in handy. The dbx Model 100 also has an infrasonic filter that rolls off the extreme low bass below 20 Hz; this helps to preserve available woofer excursion for reproducing musical bass tones, both natural and synthesized.

These oscilloscope traces illustrate the action of the dbx Model 100 (top photo), the home version of the dbx 'Boom Box' used in discos. The upper trace is of a pure 74-Hz tone fed into the unit, which generates a 37-Hz tone and mixes it with the input signal to produce the composite waveform shown below.
SUBWOOFERS...

"You will find that the assembly of such three-piece systems has been made relatively easy."

If you are harboring doubts about the wisdom of common-bass reproduction, note that in many records the bass is already essentially monophonic. Whenever there are large amplitude or phase differences between the stereo channels, the groove modulation will be vertical as well as lateral, but vertical modulations are more difficult to cut and play cleanly than lateral modulations. So, as mentioned earlier, it is common during the record-manufacturing process to combine the lowest frequencies into a monophonic signal that will be cut as a totally lateral modulation. As long as this blend is confined to low frequencies, stereo imaging is not impaired: the ear "hears" each low-frequency sound as being located wherever its corresponding midrange overtones are in the stereo sound field.

Not all recordings are made with bended bass, however. Classical music in particular is often recorded with widely spaced microphones, yielding a stereo image that depends on phase and amplitude differences between the signals reaching each mike. With such recordings it is preferable to use separate woofers or subwoofers in each channel in order to preserve the stereo information in the signal. The audible benefit for the classical-music listener is a fuller and more realistic reproduction of the texture of low-frequency sounds and a more natural sense of "depth" in the stereo image. Whether the benefits are worth the cost and inconvenience of paired subwoofers is a decision that each audiophile must make for himself.

Choosing a Subwoofer

If you are attracted by the flexibility and spacious imaging of compact or minispeakers and wish to use them with a subwoofer, it may make sense to select a bass commode from the same manufacturer who supplied your "satellites." You will find that the assembly of such three-piece systems has been made relatively easy, relieving you of the need to decide on such things as the crossover type, frequency, slope, driver phasing, and so on. Typically, a crossover is already included in the bass module; you simply run wires from both channels of your amplifier to the bass commode, and then run wires from the commode to each satellite speaker. The blending of the bass from both channels is also provided in the commode, either by means of a "matrixing" circuit in the crossover or by the use of two voice coils on the subwoofer so that it is driven directly by the inputs from both amplifier channels. Some bass commodes also contain level controls that permit you to adjust the relative volume of the bass unit and the satellite speakers.

If your satellite speakers are made by a manufacturer who does not make subwoofers, check with the manufacturers listed in the accompanying table. Some of them had you in mind when designing their units; system assembly will be nearly as easy as if you purchased a three-piece suit off the rack. But if you are setting out to add deep bass to an existing stereo system with full-range speakers, then you have a number of questions to resolve. Should you use one subwoofer or two or more? How will this affect the stereo image? Should the subwoofers be in phase or out of phase with the main speakers at the crossover frequency? Typically, there is no single "right" answer to these questions; instead, there are pros and cons to be balanced.

For example, if the low end of the main speaker and the upper end of the subwoofer are each rolled off gradually at 6 dB per octave, then an "ideal" crossover transition can be obtained with no phase or response irregularities where the two overlap. But not all designers prefer a 12 dB-per-octave crossover slope in order to avoid audible contribution from the subwoofer at mid frequencies, as well as to protect the main speakers from being overdriven by large low-frequency signals. If you set the crossover frequency low (for example, 50 Hz), then the bass unit is truly functioning as a "sub" woofer and you can use a gradual crossover with no worries about its midrange output. Moreover, at such a low frequency, an imperfect crossover transition will be inconspicuous. On the other hand, a high crossover frequency (such as 200Hz) has the very desirable property of keeping large-excursion bass signals out of the main speakers, permitting the latter to play much louder without audible harmonic or intermodulation distortion.

A passive crossover is frequently used at the output of the amplifiers; it sends the low frequencies to the bass unit and the remainder of the frequency spectrum to the main or satellite speakers. This technique essentially employs a conventional crossover network not unlike the crossovers found in ordinary speakers. It has the important virtues of simplicity, modest cost, ease of system installation, and generally good performance. But the ultimate crossover frequency and slopes will depend in part on the complex impedances of the speakers being joined, and the effect this will have on performance can only be predicted (though the manufacturer himself may have information that will help).

The theoretically superior (but more costly) option is the active or "low-level" crossover, which is installed at the output of the preamplifier and splits each channel's signal into low- and high-frequency segments which are separately amplified by individual stereo power amplifiers (a biamplified system, in other words). A broad range of electronic crossovers is available, both from subwoofer suppliers and from amplifier manufacturers. Some are designed for a fixed crossover frequency and slope; others provide a flexible choice of frequencies, slopes, or both, giving you the freedom to optimize the matching of unrelated woofers and upper-range speakers — and also the chance to produce a badly unbalanced system. Some audiophiles, using just their ears and a lot of trial-and-error listening, can succeed in setting the controls of a flexible electronic crossover for a smooth and natural-sounding transition from woofer to upper-range speaker. But in most cases the best approach is to get help from measuring instruments. I strongly recommend that you borrow or buy a real-time spectrum analyzer such as the Inev IE-10A, Phase Linear Model 1200, or Audio Control C-50A; each of these is supplied with a calibrated microphone with which you can observe the frequency response of the speakers and quickly arrive at good preliminary settings of crossover frequencies and woofer/upper-range balance. If you like, you may then fine-tune the system by ear. (Note that some real-time analyzers have appropriate test-signal sources built in.)

In addition to its potential flexibility, an active crossover provides several other advantages that help justify its cost and that of the extra amplification required. For one thing, the woofer is connected directly to its driving amplifier, whose damping factor is then fully applied to controlling the woofer's motion for tight and detailed bass. And biamplification is found to yield unusually clean, transparent sound at very high peak levels. Low-frequency signals can drive the amplifier right up to clipping without causing the treble to become harsh or gritty, since the higher frequencies are being handled by a separate amplifier.

The most widely quoted advantage of using subwoofers and satellites instead of single-cabinet full-range speakers is the flexibility it provides; you can put the mid-range/treble speakers where they yield optimal stereo imaging and locate the woofers to take best advantage of room acoustics and also the freedom to optimize the matching of unrelated woofers and satellites. This technique essentially employs a conventional crossover network not unlike the crossovers found in ordinary speakers. It has the important virtues of simplicity, modest cost, ease of system installation, and generally good performance. But the ultimate crossover frequency and slopes will depend in part on the complex impedances of the speakers being joined, and the effect this will have on performance can only be predicted (though the manufacturer himself may have information that will help).

The theoretically superior (but more costly) option is the active or "low-level" crossover, which sends the low frequencies to the bass unit and the remainder of the frequency spectrum to the main speakers. This technique essentially employs a conventional crossover network not unlike the crossovers found in ordinary speakers. It has the important virtues of simplicity, modest cost, ease of system installation, and generally good performance. But the ultimate crossover frequency and slopes will depend in part on the complex impedances of the speakers being joined, and the effect this will have on performance can only be predicted (though the manufacturer himself may have information that will help).

The theoretically superior (but more costly) option is the active or "low-level" crossover, which sends the low frequencies to the bass unit and the remainder of the frequency spectrum to the main speakers. This technique essentially employs a conventional crossover network not unlike the crossovers found in ordinary speakers. It has the important virtues of simplicity, modest cost, ease of system installation, and generally good performance. But the ultimate crossover frequency and slopes will depend in part on the complex impedances of the speakers being joined, and the effect this will have on performance can only be predicted (though the manufacturer himself may have information that will help).

The theoretically superior (but more costly) option is the active or "low-level" crossover, which sends the low frequencies to the bass unit and the remainder of the frequency spectrum to the main speakers. This technique essentially employs a conventional crossover network not unlike the crossovers found in ordinary speakers. It has the important virtues of simplicity, modest cost, ease of system installation, and generally good performance. But the ultimate crossover frequency and slopes will depend in part on the complex impedances of the speakers being joined, and the effect this will have on performance can only be predicted (though the manufacturer himself may have information that will help).
## SUBWOOFERS: A REPRESENTATIVE SAMPLER

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Size</th>
<th>Enclosure Type</th>
<th>Dimensions, in.</th>
<th>Nominal Frequency, Hz</th>
<th>Low Frequency, dB</th>
<th>High Frequency, dB</th>
<th>Price $</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustique 3A</td>
<td>SB 800</td>
<td>Two 11-inch</td>
<td>Sealed</td>
<td>12 x 30 x 27</td>
<td>100</td>
<td>50 (-1.5 dB)</td>
<td>$1,000</td>
<td>Servo-controlled 150-watt power amplifier and 100-Hz electronic crossover included</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SB 1000</td>
<td>Three 11-inch</td>
<td>Sealed</td>
<td>12 x 27 x 48</td>
<td>100</td>
<td>30 (-1.5 dB)</td>
<td>$1,200</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SB 1200</td>
<td>Four 11-inch</td>
<td>Sealed</td>
<td>14 x 35 x 38</td>
<td>100</td>
<td>30 (-1.5 dB)</td>
<td>$1,400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acoustic Research</td>
<td>Adcom FRW-1</td>
<td>10-inch</td>
<td>Sealed</td>
<td>17½ x 15½ x 17½</td>
<td>200</td>
<td>28</td>
<td>$230</td>
<td>260-Hz crossover included</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adcom LW-1</td>
<td>Two 10-inch</td>
<td>Sealed</td>
<td>28 x 12½ x 27½</td>
<td>200</td>
<td>27</td>
<td>$700</td>
<td>Passive crossover and sensitivity control included</td>
<td></td>
</tr>
<tr>
<td>Altec Lansing</td>
<td>LF-1</td>
<td>12-inch</td>
<td>Vented</td>
<td>15 x 36 x 36</td>
<td>80</td>
<td>20</td>
<td>$550</td>
<td>Passive 80-Hz crossover included</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LF-2</td>
<td>12-inch</td>
<td>Vented</td>
<td>15 x 36 x 36</td>
<td>80</td>
<td>20</td>
<td>$850</td>
<td>Selectable 40, 60, or 80 Hz crossover and 100-watt power amplifier included</td>
<td></td>
</tr>
<tr>
<td>Buroque Acoustics</td>
<td>Infrared</td>
<td>10-inch</td>
<td>Passive radiator</td>
<td>20 x 18 x 30</td>
<td>100</td>
<td>20</td>
<td>$425</td>
<td>Dual voice-coil summing circuit and passive 100-Hz crossover included</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MG-27</td>
<td>Two 10-inch</td>
<td>Sealed</td>
<td>29 x 17½ x 12½</td>
<td>200</td>
<td>27</td>
<td>$295</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contra Research</td>
<td>Pictoria Bass Cube</td>
<td>12-inch</td>
<td>Sealed</td>
<td>18 x 20 x 18</td>
<td>80</td>
<td>n.a.</td>
<td>$275</td>
<td>Dual voice-coil summing circuit and passive 80-Hz crossover included</td>
<td></td>
</tr>
<tr>
<td>Dahquist Inc.</td>
<td>DI-1W</td>
<td>13-inch</td>
<td>Sealed</td>
<td>26 x 18½ x 14½</td>
<td>520</td>
<td>24</td>
<td>$275</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DCM Corp</td>
<td>The Time Bass</td>
<td>Two 8-inch</td>
<td>31 x 18½ x 18½</td>
<td>50</td>
<td>32</td>
<td>$770 pair</td>
<td>Passive 80-Hz crossover included. No summing circuit, two units needed for stereo</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fried Products</td>
<td>D</td>
<td>10-inch</td>
<td>Vented</td>
<td>18 x 14 x 31</td>
<td>125</td>
<td>24</td>
<td>$500 pair</td>
<td>Kit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>i7</td>
<td>Two 10-inch</td>
<td>Trans. line</td>
<td>44 x 25 x 21</td>
<td>125</td>
<td>14</td>
<td>$500 pair</td>
<td>Kit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Super Monitor</td>
<td>12-inch</td>
<td>Trans. line</td>
<td>30 x 15 x 38</td>
<td>125</td>
<td>14</td>
<td>$800 pair</td>
<td>Kit</td>
</tr>
<tr>
<td></td>
<td>Hartley Products</td>
<td>1011 Bass Extender</td>
<td>10-inch</td>
<td>Vented</td>
<td>19 x 18 x 18</td>
<td>200</td>
<td>36</td>
<td>$350</td>
<td>Dual voice-coil summing circuit and crossover included</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18-inch</td>
<td>24-inch</td>
<td>Sealed</td>
<td>See notes</td>
<td>100</td>
<td>16</td>
<td>$650</td>
<td>Systems built to order*</td>
</tr>
<tr>
<td>Intersearch</td>
<td>Audio Pro 80-50</td>
<td>Two 6½-inch</td>
<td>Vented</td>
<td>21 x 18½ x 17½</td>
<td>250</td>
<td>20</td>
<td>$795</td>
<td>Variable-frequency electronic crossover and 80-watt power amplifier included</td>
<td></td>
</tr>
<tr>
<td>Jamis Audio Assoc.</td>
<td>W-1</td>
<td>15-inch</td>
<td>Slot-loaded</td>
<td>17½ x 22 x 22</td>
<td>100</td>
<td>24</td>
<td>$685</td>
<td>Jamis Interphase crossover/amplifier required ($495)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W-2</td>
<td>15-inch</td>
<td>Slot-loaded</td>
<td>17½ x 22 x 22</td>
<td>100</td>
<td>29</td>
<td>$450</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mesa Electronic Sales</td>
<td>MS-80</td>
<td>10-inch</td>
<td>Passive radiator</td>
<td>16 x 16 x 16</td>
<td>115</td>
<td>33</td>
<td>$249</td>
<td>Matrix crossover included</td>
<td></td>
</tr>
<tr>
<td>Miller &amp; Kreisel Sound</td>
<td>M&amp;K Bottom End II Cube</td>
<td>12-inch</td>
<td>Sealed</td>
<td>18 x 18 x 18½</td>
<td>150</td>
<td>26</td>
<td>$170</td>
<td>Dual voice-coil summing circuit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Galatia II Cube</td>
<td>12-inch</td>
<td>Sealed</td>
<td>18 x 18 x 18½</td>
<td>150</td>
<td>26</td>
<td>$235</td>
<td>Dual voice-coil summing circuit and variable 50- to 150-Hz crossover included</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Volkswimmer</td>
<td>12-inch</td>
<td>Sealed</td>
<td>18 x 18 x 18½</td>
<td>100</td>
<td>15</td>
<td>$445</td>
<td>Electronic crossover and 80-watt servo-controlled amplifier included</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Studio Discus IV</td>
<td>Four 12-inch</td>
<td>Sealed</td>
<td>23 x 23 x 40</td>
<td>380</td>
<td>26</td>
<td>$945</td>
<td>Dual voice-coil summing circuit</td>
</tr>
<tr>
<td>Ohm Acoustics</td>
<td>1012</td>
<td>Two 8-inch</td>
<td>Passive radiator</td>
<td>16 x 15 x 15</td>
<td>140</td>
<td>32 (-4 dB)</td>
<td>$340</td>
<td>Passive 140-Hz crossover included</td>
<td></td>
</tr>
<tr>
<td>RTR Industries</td>
<td>716 City Line Ave.</td>
<td>15-inch</td>
<td>Sealed</td>
<td>18 x 20 x 15½</td>
<td>180</td>
<td>35</td>
<td>$250</td>
<td>Kit, vinyl walnut-finish cabinet</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8116 Deering Ave.</td>
<td>12-inch</td>
<td>Sealed</td>
<td>18 x 20 x 16</td>
<td>180</td>
<td>23</td>
<td>$750</td>
<td>Adjustable-frequency electronic crossover, 130-watt power amp included, unfurnished cabinet</td>
<td></td>
</tr>
<tr>
<td>Speakerlab</td>
<td>PSW1</td>
<td>Two 10-inch</td>
<td>Slotted</td>
<td>18 x 20 x 15½</td>
<td>180</td>
<td>33</td>
<td>$250</td>
<td>Dual voice-coil summing circuit and 300-Hz crossover included</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD 1000</td>
<td>12-inch</td>
<td>Sealed</td>
<td>20 x 20 x 16</td>
<td>180</td>
<td>33</td>
<td>$250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ultraplars Loudspeakers</td>
<td>S-1</td>
<td>10-inch</td>
<td>Passive radiator</td>
<td>13 x 16½ x 13½</td>
<td>500</td>
<td>33</td>
<td>$250</td>
<td>Dual voice-coil summing circuit and crossover included</td>
<td></td>
</tr>
<tr>
<td>Visokoil of America</td>
<td>Sub-1</td>
<td>12-inch</td>
<td>Sealed</td>
<td>23½ x 17 x 13½</td>
<td>150</td>
<td>28</td>
<td>$400</td>
<td>Dual voice-coil summing circuit and crossover included</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub-2</td>
<td>10-inch</td>
<td>Sealed</td>
<td>19 x 14½ x 12½</td>
<td>150</td>
<td>42</td>
<td>$380</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figures are not directly comparable, in some cases, owing to differing methods of measurement

1 Subwoofer drivers also available without cabinets for user installation: 18-inch, $325; 24-inch, $375

2 Shown are pairs of woofers operating in a single enclosure
In this world of mass-produced look-alikes, there are always a select few products that stand out above the rest. Their purchase price is often less premium than you may imagine, particularly when you consider their extraordinary operating flexibility, construction and years of dependable service. And, of course, their superior level of performance.

Knowledgeable experts around the world place Tandberg high fidelity products in that special category. The TR 2080 stereo receiver, for example, is actually made up of a recognizably superior electronic tuner, preamplifier and power amplifier, each on its own separate chassis, perfectly balanced into one integrated unit. Moreover, these individual sections of the receiver offer specifications & flexibility normally associated with individual components whose total price would be much, much more than the TR 2080. So, perhaps it is even possible to consider it a bargain.

See the entire Tandberg receiver line—a series that shares more than just their exquisite rosewood cabinetry. Indeed, you will discover a commonality of performance, specifications and features that reflect the world-famous Tandberg commitment to integrity.

For the name of your nearest dealer, write: Tandberg of America, Inc., Labnola Court, A-monk, N.Y. 10504. Available in Canada.

TANDBERG

CIRCLE NO. 64 ON READER SERVICE CARD
Tape Equipment

If the 1979 CES had a center of innova- tion activity, it was in the area of cassette technology. Pure-metal-tape capability is now available on decks from almost every major manufacturer. Two-speed cassette decks are emerging at a rapid rate. Minia- ture computers (microprocessors) order the playing sequence of selections on a tape, adjust the recording circuits for optimal results with virtually any tape, and store all com- mands for retrieval at a later time. In addition, new schemes have been brought to bear on the perennial problem of cassette high-frequency headroom: last month’s “Tape Talk” column described the Dolby BX system, and this month’s is devoted to Tandberg’s “Dyneq” circuit. (For further details on these new developments, check with the manufacturers.)

Nakamichi has fulfilled a long-standing promise by introducing its own two-speed cassette deck—one with the normal speed of 1/4 ips and a half speed of 15/16 ips! The Model 680 is said to maintain flat frequency response out to 15,000 Hz at the slower speed by virtue of a three-head transport with a remarkably narrow playback-head gap. Similar ingenuity has been applied to the problem of erase effects for the very short wavelengths occasioned by the slower speed. The Nakamichi 680 employs the same innovative transport mechanics as the Models 581 and 582, plus a memory function that automatically seeks and plays any des- ignated selection on a tape. It can also record and erase pure-metal tape. Price: $1,350. Nakamichi has also brought out its new two-band companion noise-reduction system, developed in cooperation with Telefunken, as an outboard unit called the “Hi- Com II” ($420).

Tandberg’s new cassette deck, the three- motor, three-head TCD-440A, also features automatic program selection, metal-tape capa- bility, and the unique new “Dyneq” circuit that varies recording pre-emphasis in accordance with the requirements of the program material (see page 32). A user-accessible bias adjustment along with built-in test-tone oscillators can be used to opti- mize the $1,600 machine for any tape.

Of four new cassette decks from Dual, the top two models offer a choice of auto- matic reverse in record and playback (Model 839 RC, $850) or full three-head operation (Model 830, $550). The two lower-cost mod- els, at $420 and $330, share with the more expensive decks such features as recording-level indicators (LED displays or meters) that register the effects of recording pre- emphasis and a transport that permits in- stantaneous cassette insertion and removal.

Six new Technics cassette decks include the metal-capable RS-M63 ($450), a three- head design with various modes of memory rewind/play, the auto-reversing RS-M68 ($550), the microprocessor-equipped RS- M56 ($500), which will sort among as many as twenty selections on a tape to pick out the desired one, and three models ranging in price from $250 to $175, two of which have fluorescent recording-level indicators. And for its “professional series,” Technics has added the $550 RS-M65; it has a direct-drive capstan motor and a low-silhouette chassis that can be rack mounted.

Phase Linear’s first cassette deck, the Model 7000 Series Two, offers such features as fully automatic adjustment of bias, equal- ization, and sensitivity for any tape type (in- cluding pure metal), a three-head dual-cap- stian transport with speed regulated by a quartz-crystal oscillator operating in a phase-locked-loop configuration, and a memory that will store adjustment data for up to nine different tapes. A large hinged panel covering two-thirds of the deck’s front conceals all but the essential controls and indicators. The 7000 Series Two costs $1,350 and seems worth it from its appear- ance alone.

In the same vein, Eumig has created the “M” presumably referring to metal-tape, only in prototype form up until now. Be- sides being self-adjusting for any tape brand or type, the machine operates under total digital control, all transport and electronic control functions having been assigned a digital code. This permits interfacing with any eight-bit home computer system so that the user can create a program to govern any function the machine is capable of.

A multitude of new cassette decks from Marantz is capped by the SD 9000 ($775), a two-speed (1/4 and 1 3/4 ips), three-head ma- chine with a keyboard for an internal micro- processor that governs a number of pro- gram-sequencing, timer (built in), and clock functions. At a lower price there’s the SD 8000 ($650), also metal-capable and key- board-equipped but in a two-speed format with the same two speeds. Marantz Models SD 6000 through SD 1000 ($500 to $235) are two-speed machines as well, one of which (the SD 4000) has three heads and two of which can handle metal tape.

Two major Japanese manufacturers have de- vised one cassette machine apiece to ex- ploit the possibilities of metal tape without breaking the purchaser’s budget. The JVC KD-A6 is a relatively straightforward metal-compatible deck with solenoid transport controls and a (low) price that was not avail- able at press time. The Hitachi D-71S ($400) is similarly basic and also has soleno- switched controls. Metal tape is significant at Sansui this season as well, with the $520 SC-5330 leading a pack of five metal-capable machines that descend in price to $320. All the Sansui metal decks have “Sendust” re- cord/playback heads. The SC-5330 is graced with a number of automatic features involv- ing tape rewind and repeat. The least expen- sive models, the SC-1310 and SC-1300 (both $320), are comparatively straightforward machines. A basic non-metal deck, the $200 D-90, has also been added to the line.

B.I.C., the company that made the first move to two-speed cassette decks, will crown its line this year with the $850 T-4M, the “M” presumably referring to metal-tape.
capability. The T-4M is another machine with a test-tone oscillator and continuously variable bias adjustment to “trim” the electronics for flattest response with any tape. And B.I.C. has also brought out the two-speed C-1 car cassette player in production form: 12 watts per channel of amplifier power and a price of $230. The company’s other car-player introduction, the $210 T-05, is a single-speed unit.

Joining Luxman’s impressive $1,000 K-12 are two new metal-capable machines, the $745 K-10 and the $495 K-5A. Like the K-12, both are designed to interface with the novel Luxman cassette, which contains a sophisticated tape-guidance system and adjustments to reduce tape skew. Like the Luxman models, the new Yamaha TC-920B ($600) uses a Sendust record/playback head made with a proprietary technique called the “Pure Plasma Process.” Although the deck is not set up to handle metal tape, it does have a double-gap ferrite erase head.

Five new cassette decks from Sony include two—the TC-K75 ($600) and the TC-K65 ($500)—that handle metal tape. The rest, spread over a price range of $400 to $250, will handle all other types of tape. Sony also has a new portable cassette recorder with Dolby noise reduction and chromium dioxide and ferrichrome tape capability. The TC-D5 ($680) also has a built-in monitor amplifier and speaker—with a total weight of only 3/4 pounds. The five latest decks from Fisher also offer metal-tape capability in the top two models, two-speed operation in all, and a three-head transport in the top-of-line CR4029 ($500). The CR4028 is the other metal deck, with an automatic search/play function that will seek out any desired selection on a tape.

Kenwood’s newest cassette decks, the $350 KX-760 and $225 KX-550, feature particularly large flywheels for tape-motion stability. And Sherwood has entered the cassette field with its first product, the CD-200. Optonica’s RT-650/26 is an elaboration on the celebrated RT-650, the first microprocessor-controlled cassette deck addressed by a full keyboard. The new machine ($520) incorporates all the microprocessor functions of its predecessor, plus metal-tape capability and generally improved specifications. Two other Optonica models, the RT-620/26 ($460) and RT-610/15 ($340), also handle metal tape, while the non-metal RT-600/15 ($270) has Optonica’s “Automatic Program Search” function.

The inauguration of Sanyo’s “Plus” series continued with seven cassette decks, all metal-capable. Two of them, the Plus RD5372L ($500) and RD5370 ($400), employ three heads, while a third, the Plus D65 ($400), features auto-reverse. New for its main line of stereo components is the $190 RD5305, which would seem to be the lowest price point at the moment for metal-tape capability. At $100, the Sanyo RD506-will handle chromium-dioxide tape, although it lacks noise reduction.

Toshiba now offers two full-size cassette decks that handle metal tape and a “mini” machine that doesn’t. The PC-X40 and PC-X20 ($380 and $300, respectively) are similarly styled and featured units, with the PC-X40 adding a keyboard for an automatic play-selection feature. The mini deck, the D15 ($550), provides remote-control operation and a number of automatic features. Aiwa also has a mini cassette deck, the $210 SD-L22U, as well as two new full-size machines that can utilize metal tape. The $1,000 three-head AD-6900 Mark II U-permits all transport functions to be governed by a wireless (infrared) remote controller, and it also has internal test oscillators for use with a bias fine-tuning adjustment. Second in line is the AD-L40U at $490, and two other machines, the AD-M200U ($260) and AD-M100U ($210), are new offerings in the category of “conventional” cassette decks.

At about the same time去年, the T-CX-500 and CX-210 with conventional level meters and CX-650R and A-550RX (with built-in dbx noise reduction), and the CX-260 with fluorescent recording-level meters and CX-210 with conventional meters.

Pioneer’s open-reel RT-909 ($895) combines the overall format and styling of the rack-mounting 700 series with some features of the manufacturer’s most elaborate open-reel machines. Speeds are 3 1/2 and 3 3/4 ips in a quarter-track stereo configuration with a dual-capstan transport. Both 7- and 10 1/2-inch reels are accommodated, and alignment adjustments for the head block are accessible through perforations in the head cover.

Auto-reverse is initiated by means of sensing foil applied to the tape as well as when the tape counter returns to a zero setting. A non-reversing model, the RT-901 ($795), is also on the way.

Pioneer’s cassette units are all metal-capable this year. The CT-F1250, leading the five-model line with capabilities, bias, equalization, and sensitivity; dual-capstan drive; a host of automatic features; and three heads. The CT-F750 provides auto-reverse in both playback and recording for $395, employing a stationary four-track record/playback head. Other new Pioneer models are priced from $595 to $295.

Akai remains very active in open reel, with a new 10 1/2-inch-reel model, the GX-620 ($750), and the GX-255 ($650), a 7-inch-reel near-equivalent (with auto-reverse in playback). On another front, Akai has adopted its glass-and-crystal-permanganate metal-heads to metal-tape duty and installed them in four new cassette decks: the GX-M30, GX-M50, GX-F80, and GX-F90.

Finally, the Sharp RT-4488 ($500) cassette deck can handle metal tape and program any number of playback schemes through a front-panel keyboard and built-in microprocessor. And beyond analog recording, both Sharp and Toshiba have announced production-ready digital audio processors to mate with their video cassette equipment. Sharp’s is the PCM-XI, and Toshiba’s is simply the PCM. Prices are still tentative.

**Speaker Systems**

Loudspeakers tend to outnumber all other new products at these shows, and they often manage to provide examples of both the best and the worst of what can be seen and heard. While not exhibiting widespread adherence to any new trend of technology or styling, the manufacturers this year seemed to demonstrate that they had lost none of their vitality and willingness to innovate.

If you are old enough to remember the so-called “Cambridge (Mass.) Sound” represented the conservative, “establishment” approach to high-fidelity reproduction, you will soon realize that there have been some changes made. Acoustic Research, which once championed the “book-
Aiwa SD-L22U cassette deck

Marantz SD 9000 cassette deck

Phase Linear Model 7000 Series Two cassette deck

Dual 839RC cassette deck

Pioneer RT-909 tape deck

Akai GX-620 tape deck

Sony TC-DS portable cassette recorder

shelf” speaker, is now most enthusiastic about its floor-standing models, newest of which are the $400 AR91 and $300 AR92. Both are three-way designs differing most significantly in woofer size (12 and 10 inches, respectively).

KLH, the other “dowager empress” of the Cambridge set, has also departed from tradition to introduce “Computer Controlled” speaker systems, the KLH 1, KLH 2, and KLH 3 (from $1,000 to $420 the pair). The “computer,” which goes between preamp and power amp or in the tape-monitor loop, regulates the output of the power amp in accordance with the low-frequency requirements of the music signal and—if they are a factor for any given signal—the excursion limitations of the woofers. A new noncomputerized small system, the KLH 4 ($260 the pair), is also available.

Back when Cambridge was the capital of the speaker world, the so-called “California Sound”—brassy, aggressive, up-front—was the major contender for the crown. California speaker manufacturers still assume that listeners prefer (and therefore they design for) loud listening levels, but over the years they have tamed the tigers in their designs by smoothing and extending frequency response. The LI50 from JBL is a three-way, floor-standing design with a 12-inch passive radiator. Other JBL introductions include the Radiance Series, a total of three two- and three-way designs that can be used with their sculpted grilles either in place or removed (revealing a baffle board clad in metal-finish Mylar), and the three-way L222, described as a “home disco” system. An equally famed California manufacturer, Altec, brought a new subwoofer to the show, reinforcing a trend that has enjoyed worldwide popularity of late (see page 68).

Once there was also thought to be a “Japanese Sound”—something which, if it ever truly existed, has now largely disappeared through the efforts of Technics and others. This year Technics has enlarged its “Linear Phase” line with the Models SB-L300 and SB-L200 (both three-way), and the SB-L100 (two-way). All three employ horn tweeters with a tapered radial flare. As a result of complex analyses of waveform propagation, JVC has also fastened on a new tweeter design, designated the “Dyna-Flat” ribbon device. Although more closely related to the new planar-diaphragm tweeters than to the classic corrugated-diaphragm ribbon design, the JVC driver does utilize a shallow horn, as did many of the original ribbon tweeters. Its first use will be in the new Zero-5 three-way speaker system.

We are not aware that anyone has ever identified a generic New York City Sound, but if there is one it ought to belong to Ohm Acoustics, the only current speaker-system manufacturer in the metropolitan area. Ohm’s latest introductions include the Model M minispeaker ($145), which can be teamed up with the Ohm N subwoofer ($320) for a full-range home system. The Model N encloses two 8-inch woofers in a single cabinet, while the compact Model M
from a brand-new company formed by graduates of another highly distinguished speaker-manufacturing team. The enclosure of the $400 floor-standing system is unusually shallow and particularly attractive.

KEF's expansion into the U.S. market from its native England continues vigorously, with the latest introductions being the compact two-way Model 101 ($250), the $175 Model 303 and $295 Model 304 (both available with optional pedestal stands), and kit versions of the popular 104ab and Canton models, priced, respectively, at $250 and $395. The kits come in pairs and include drivers, acoustic filters, crossover networks, controls, and fuse blocks, plus instructions for building suitable cabinets.

Mitsubishi’s floor-standing MS-40 is the largest home system yet to employ that manufacturer's honeycomb-sandwichcones, a mode of construction eloquently described by its name and very effective in promoting high rigidity without excess mass. Avid’s $135 Model 110, a two-way design with an 8-inch woofer, is the latest Avid system to employ the company's diffraction-minimizing system construction. Onkyo's F-5000 is a seventy-two drivers. Low-frequency modules employing a combination of 15- and 8-inch woofers can be added to create full-range systems. The company has also brought out a line of car speakers.

Ultralinear is promoting floor-standing speaker systems, the $150 DW-8 and $200 DW-10, with attractive ($150 and $200) prices, plus four new "bookshelf" designs, from $70 to $200. Visonik’s latest, the Euro 6 and Euro 8, also install on the floor. Woofers of 8 and 10 inches are used, and prices are $300 and $380. The MS145 ($140) expands an existing speaker line from Fisher, but waiting in the wings is a new series utilizing woofer cones that appear to be made of a metal foam; leaders of the series are the STE-1150 and STE-1110.

New systems from Audioanalyst begin with the A-400XL, "Phantom Array" ($360), a four-way system with eight symmetrically arranged driver arrays on two angled panels. They continue with Phase Matrix M5 ($189) and finish up with the $139 two-way Phase Matrix M4v-II. On the Audioanalyst drawing board is a passive network that is intended to derive a difference signal from the two stereo channels, delay it, and route it to auxiliary speakers for ambiance enhancement. It should be available soon as an outboard unit or built into a proposed new speaker system, the three-way M-12.

Acoustique 3A plans to have numerous new speakers available this year, two of which are floor-standing (Alto and Allegro) and described as disco-type designs. Another (Prelude) will employ the company's correctional feedback system based on the acoustic output of the woofer, and a fourth (Auditorat) will inaugurate a new phase-coherent line. Prices run from $219 to $539.

A new transmission-line system, the Infiniti 120, is scheduled for introduction late this year. A modification of the transmission line (intended to make it applicable to smaller enclosures than would otherwise be possible) will be used by IMF for the new ALS 30, a system employing two oval woofers and a 4-inch midrange/tweeter. DCM Corporation has also been concerning itself with low-frequency response, and the result is the Timebase, a subwoofer intended to be used in pairs with the manufacturer's Time Window system and to blend harmoniously with its transient-response characteristics. A pair is $770, with internal passive crossover networks included.

Qsonic, a company that has traditionally sought deep bass from small boxes, is now seeking the same from even smaller boxes: the Tad H ($225) and the Spree ($140). The secret is said to be a fairly complex resistive port with some acoustically capacitive elements included. Symdex has integrated a new version of its Sigma speaker system with the new Omega series of crossover and a new Canadian company, Junette Laboratories, has begun producing speaker systems featuring ribbon tweeters operational down to 600 Hz. The first of these, the CR 602, is priced between $950 and $890.
depending on finish. An add-on tweeter, the Satellite/1 from Audio Scientific by Superex, uses a pair of dome drivers in a truncated pyramid enclosure; operating frequency range is 4,000 Hz and above.

The Dahlquist team has managed to create a three-way speaker system of conventional rectangular ("bookshelf") appearance while still retaining the features of phase coherency and "open-air" mounting of the midrange and high-frequency drivers. Designated the DQ-3, the system will cost about $225. A new Beveridge electrostatic system, as tall and imposing as its predecessors, has built-in 10-inch dynamic woofers top and bottom and is said to be capable of outputs 5 to 6 dB greater than previously introduced models. The buyer can use amplifiers of his choice with the Beveridge System 3 ($3,500 per pair), and 50 watts per channel is said to be quite adequate for satisfactory performance.

And a few other introductions of note: three new models from Radio Shack, the largest being a $260 column with two 10-inch woofers; a host of new speakers from Mesa, including everything from large subwoofers to diminutive minispeakers; and, finally, a whole speaker complex from Burhoe Acoustics. This takes two almost-full-range speaker systems (SuperCrimsons) placed at the front of the room, two smaller systems at the rear, a subwoofer module almost anywhere desired, and an electronic module at the site of the amplifier or receiver. In addition, the "Ruby" electronic module, designed in cooperation with Sound Concepts, delays signals from the rear, inhibits their treble content, and feeds the subwoofer. No additional amplification is required with the system.

**Accessories**

An "audio accessory" can be anything from an inexpensive stylus brush to a digital signal-delay device approaching $1,000 in price. In today's market there is no lack of entries in any category.

One of the latest signal-delay units is not digital but operates instead on the bucket-brigade principle. Though its price of $195 hardly approaches that $1,000 mark, the Pioneer SR-301 can be used to provide a single delay of up to 100 milliseconds for "doubling" vocal or instrumental parts or to provide artificial reverberation in a recirculation mode. An eye-catching front-panel display indicates the degree of signal processing applied. Pioneer has also introduced an octave-band equalizer, the SG-9800 ($395), with twelve slider controls per channel, and a new version of its dynamic-range expander, the $195 RG-2.

Phase Linear's new equalizer, the Model 1100, is a parametric design with five control bands per channel and generous overlap between them. A useful adjunct to the Model 1100 is provided in the Phase Linear 1200 Series Two real-time analyzer; the display is in octave bands with twenty LEDs per octave. Also included with the $800 instrument is a built-in pink-noise generator and an in-
dividually calibrated condenser microphone said to be of professional quality.

More equalizers are coming from Sansui in the form of the octave-band SE-7 graphic device ($300), with separate controls for each channel, and the octave-band SE-5 ($200), with controls that affect both channels simultaneously. New from ADC is the Sound Shaper 3, called a "Paragraphic" equalizer, evidently because the center frequencies of the twelve controls per channel can be switched a half octave up (or down). The Nikko EQ-2, at a modest $200, is a six-band equalizer with each control affecting roughly an octave and a half. And the Rotel RE-700 goes it one better; seven bands at $180.

Among other types of signal processors seen was the new MXR Dynamic Expander, which affords as much as 8 dB of upward expansion and 21 dB of downward expansion for $300. Release time is user-adjustable, and expansion characteristics are linear. Audio Pulse, which introduced the first truly digital signal-delay/reverberation-synthesizer device to the market some years ago, is now offering its third-generation Model 1000. Employing the same principles of delta modulation, recirculation, and cross-connection as the company's previous products, the new model provides considerably more control flexibility and several operational refinements based upon real-world acoustics. It also contains a dynamic-range expander with associated LED display and outputs for up to eight channels with various delays. The API02 speaker system is also offered by Audio Pulse for use in reproducing the delay channels. A more modest delay device, the Model ATD-1, is also now available from Nikko at $450.

Readers who have followed the progress of the Tate four-channel matrix decoder in these pages for some years will be gratified to learn that it is now finally honest-to-goodness (we hope!) available. Fosgate, the prominent car-stereo manufacturer, is introducing the Tate system in its first home product, the Tetra II ($995). stylish like a small studio console, the Tetra II is inserted between preamp and power amp or in the tape-monitor loop, where it provides complete control over channel balance and stereo panorama and dimension. There is also an elaborate LED display to indicate circuit activity. The system is intended principally for SQ decoding, but it is said to enhance two-channel material dramatically.

Headphones are getting lighter (often because of more efficient magnetic materials), better, and (inevitably) more expensive. The Koss Tech II, available for the first time in the U.S., is priced at $60, as are the Pickering OA 5A and the Stanton Dynaphase 55. Sennheiser's latest models, the HD 430 and HD 420, are $119 and $85, respectively. And Toshiba has new headphones, the HR 811 and HR X1, for $75 and $65.

Equipment cabinets continue to appear from both furniture makers and component manufacturers. The vertical complexes by Crown adopt the rack-mount scheme, with a choice of six high-quality finishes offered. Akai offers a choice of rack- or shelf-mounting in several vertical and horizontal formats. The new Sound Stack cabinets are all verticals with shelf-mount facilities in several optional forms, as are the products from Hados (HHS Enterprises).

In record care, Ampex has devised a brush that applies a cleaner and antistatic agent, together with tools for inspecting and cleaning phono stylus. It has also introduced a new kit for comprehensive tape-recorder maintenance. Both kits cost $9. Sound Guard's Record Buffer ($4) can be used for both wet and dry cleaning. Robin's Robo-Lite ($20) snaps onto the bottom edge of a turntable dust cover and turns on automatically when the cover is raised, illuminating the record and the machine's controls. Audioviz (GC Electronics) now has a combination record brush and piezolectric destaticizer, the KC-2000, plus new speaker and phono cables. Monster Cable, manufacturer of high-quality speaker wires of heavy gauge, has supplemented them with connectors that will take the large wire size. Many are gold plated. More connectors—male-to-female patch-cord extenders in this case—come from Audio-Technica at $8 per pair, also gold plated. The company has also introduced Lifesaver ($13), a dry record lubricant with antistatic properties. Le-Bo products concentrated on tape for this show, with new carrying cases that will take up to sixty cassettes and twenty-four eight-track cartridges.

Perhaps the ultimate record accessory is dbx's revival of its "Encoded Disc" format. It takes specially encoded records and plays them back through a dbx Model 21 decoder ($109). The result is said to be unimpaired dynamic range and inaudible surface noise. As many as two dozen record labels have reportedly agreed to undertake production of the encoded discs, and dbx expects at least a hundred records to be available within a year at prices between $8 and $16.

Finally, although coverage of car-stereo developments has appeared elsewhere this year (see the July issue and last month's "New Products"), a few highlights deserve special mention. These include new mobile speakers from Altec, Bose ("Direct/Reflecting"), and JBL. ADS also has a new car speaker, the two-way L300i ($117.50 per pair), plus a new 50-watt-per-channel automotive amplifier, the Power Plate 100 ($295).

Envoi

It is a special frustration to read about the introduction of so many new products and not be able to get further information on the specific items that interest you. We hope that won't be your fate, but we should warn you that many of the above products do not yet have firm dates for availability and a few are still largely experimental. Withdrawal of a new development for more work or other reasons is routine in the audio industry. When that happens, we have no means of serving as a further source of information. In every case, the manufacturer is the best source of data—at least until we have received material for a "New Product" writeup or a sample for test.
Sansui is breaking up a very successful relationship. The TU-717 has a new mate: The AU-719.

Sansui has just introduced an exciting new integrated amplifier, the AU-719. It represents the very latest developments in audio and electronics technology. It is so good, in fact, that it has replaced its rave-reviewed, best-selling predecessor as the partner of the TU-717 tuner.

The TU-717's performance has been extravagantly praised by professional critics and knowledgeable consumers alike. With advanced features like switchable IF bandwidth and specs like 81dB signal-to-noise ratio and 0.06% THD, it's only natural. We expect the tuner's new mate to receive a tremendous reception and set industry amplifier standards for a long time to come. Here's why.

**INTRODUCING DD/DC**

What particularly distinguishes the new AU-719 amp is Sansui's patent-pending DD/DC (Diamond Differential/DC) circuitry that provides the extremely high drive current needed to reduce THD by adding large amounts of negative feedback without compromising slew rate or adding TIM.

Slew rate refers to an amplifier's ability to respond to rapidly changing musical signals. The slew rate of the AU-719 is an astounding 170V/µSec.

**MAGNIFICENT MUSIC**

Many modern amplifiers have extremely low total harmonic distortion specs. And that's important. But THD is measured with steady test signals and is not really representative of an amp's ability to deal with music. Sansui alone, with its DD/DC technology, is able to provide both low THD and lowest TIM simultaneously. Instead of the harsh metallic sound you sometimes get on a conventional amp when the musical signals are complex, with the AU-719 you hear only magnificent music.

THD is less than 0.015% at full rated power of 90w/channel, min. RMS, both channels into 8 ohms from 10 - 20,000 Hz. Overall frequency response is awesome: DC - 400,000 Hz, +0, -3dB. Hum and noise are a super-silent -100dB on aux and -88dB on phono. The phono equalizer, which adheres to the standard RIAA curve within ±0.2dB from 20 - 20,000 Hz, also uses our unique DD/DC circuit for record reproduction that's second-to-none.

**CONTROL YOURSELF**

The unit is equipped with a full complement of versatile controls and connections to create the system and sound that's right for you, including two phono and two tape inputs, defeatable tone controls with switchable center frequencies, deck-to-deck tape dubbing and a very convenient 20 dB muting switch.

Audition the new AU-719 and matching TU-717 at your authorized Sansui dealer. We think it will be the start of a very successful relationship.

**SANSUI ELECTRONICS CORP.**

Lyndhurst, New Jersey 07071 - Gardena, Ca, 90247
Sansui Electric Co., Ltd., Tokyo, Japan
Sansui Audio Europe S.A., Antwerp, Belgium
In Canada: Electronic Distributors

CIRCLE NO. 51 ON READER SERVICE CARD
JAMES GALWAY
By Allan Kozinn
If James Galway’s flute playing were not so dazzling, he’d be just the sort of performer critics love to hate. For nearly two years before he made his U.S. debut, Galway was known here primarily as the man who turned Vivaldi’s Four Seasons into a set of flute concertos. Reports from Europe, meanwhile, painted a picture of the diminutive Irishman not only as an extraordinary player capable of giving Jean-Pierre Rampal a run for his money, but as a budding pop star whose version of John Denver’s Annie’s Song was sailing up the hit-singles charts of the Common Market in hot pursuit of his recording of François Gossec’s Tambourin. His first American tour, in the summer of 1978, was given as massive a publicity campaign as a classical artist could hope for, particularly in New York and Los Angeles, where posters of his bearded countenance beamed from thousands of billboards and newstands.

On stage, Galway’s manner is one of seemingly calculated nonchalance—a kind of comment not on the music, but on the conventional atmosphere and demeanor of the classical concert hall. He walks on with an informal, bemused air, one hand in his pocket, the other carrying his flute over his shoulder like a fishing rod. It’s almost as if he were daring the critics to pan him. But those who have heard Galway play know that these light-hearted showbiz shenanigans detract not a whit from the superb musical sense he developed as principal flutist of the London Symphony, the Royal Philharmonic, and the Berlin Philharmonic, to say nothing of the polish his playing has gained since he went solo in 1975. As Galway sees it, his unorthodox approach to music making is the secret of his success.

I think it’s very apparent how much I enjoy playing,” he says, “and I really do. You can’t put on an act night after night, because people can tell. You see, I want to play to and for my audience, rather than coming in and saying, ‘Now listen to this thing I’ve practiced, and don’t you think it’s wonderful that Mozart wrote this when he was only eight?’ That’s for the birds. People come to hear you the way they used to come to hear Rachmaninoff or Kreisler. They want some magic, and that’s what I want to give them.

“I have a lot of kids coming to my concerts,” he adds, “because the flute is sort of a kids’ instrument. It’s very easy to play at a certain level. And then, of course, there are so many approaches to the flute. There’s the German intellectual way of playing, where everything is organized. Or there’s the French method, where everything is detached. There’s also the other way—the way of really getting into the piece, changing the colors, and taking chances with the music so that something electric happens. Every performance and performing situation is different and must be regulated by what the audience needs.”

Galway, who is now thirty-nine, has been playing the flute since he was ten years old. He tried the violin first but gave it up, partly because his instrument was “full of woodworm, covered with adhesive tape, and falling to bits” and partly because the flute was just a more natural instrument for a Belfast lad to be involved with.

“Both my father and my grandfather played the flute, and the whole place [Ireland] is covered with flute bands. They’d be playing a lot of traditional Irish music as well as a lot of classical music. So I thought, ‘Well, I’ll learn the flute, get in a band, and have a good time.’ ”

Which is what he did until his father, a shipyard worker, decided that the time was ripe for James to find serious work. Young Galway, however, had ideas of his own. “My teacher,” he recalls, “had considerable professional experience and told me to forget about getting a job and to keep practicing—I could always find a job if it didn’t work out. So, with that in mind, I got a scholarship to the Royal College of Music in London.”

He also spent some time in Paris engaged in what seems to have been a rather unorthodox course of study with Jean-Pierre Rampal, whose influence Galway plays down these days.

“I used to go along to Rampal’s house and have breakfast with him or listen to his records. I actually played for him once or twice. But my studies consisted mainly of following him around Paris like he was the greatest.”

“I haven’t listened to a record of Rampal’s in about fifteen years. After my six months in Paris, I got to doing my own thing, and I stopped listening to other flute players. I wanted to be influenced by something greater. I wanted the variety of tone and the dedication that Maria Callas had, the virtuosity of Jascha Heifetz, and the general freedom of Horowitz. No flute player is on the same plane as those three.”

Upon his return to London from Paris, Galway fell into a series of jobs that consisted mainly of doing what he was told. He also helped the local pop scene by providing incidental flourishes for Shakespeare plays.

“It was tremendous being on the scene with all those actors, but musically it was the most boring experience I’ve ever had. It was just ten bars here and ten bars there. My next jobs, at Sadler’s Wells and the Royal Opera House, weren’t much better. Opera is very nice to listen to, but if you play in the orchestra you find yourself going around to filthy theaters and playing in dirty pits. And you have no idea how dirty some of them are until you’ve played there. Symphony orchestras were definitely a step higher.”

A step, perhaps, but after two weeks as principal piccolo in the BBC Symphony, three years as principal flute of the London Symphony, a season with the Royal Philharmonic, and six years with the Berlin Philharmonic, Galway was more interested in great leaps. Even as principal flutist, solo opportunities were few, and the scarcity of free time made it impossible for him to work up a good solo repertoire or a part-time solo career. By 1975, Galway was beginning to balance the security (including the pension) he had with the Berlin Philharmonic against the artistic freedom he might have as a soloist.

Herbert von Karajan—which Galway usually refers to as “Herbie”—first sent another player to convince Galway to stay in the orchestra. But eventually even Karajan advised him that’s what you want to do. “It’s best while you’re still young.” On his thirty-sixth birthday, Galway left Berlin. Three years later, he had a string of LPs selling 250,000 copies (total) per year in Europe alone, two hit singles, miles of press acclaim, and true superstar status right down to the posters and the James Galway T-shirts.
visual record of his repertoire so that he will be able to communicate with millions of people rather than hundreds or thousands."

Conventional recordings, naturally, play an important part in this plan too, and while Galway has made some "straight classical" albums (the Mozart concertos, the Franck and Prokofiev sonatas, Bach concertos, and the Vivaldi Four Seasons transcription), those that have received the most attention are albums of short encore pieces and popsy arrangements. The latest of these records is the chart-topping "Annie's Song" LP, a disc Galway says he and Emmerson planned piece by piece for nine months. With a program ranging from Mozart, Fauré, and Villa-Lobos to Denver by way of Irish and Basque folk tunes, the album, the flutist is sure, has something for everyone.

"Those records are fun to make," he says, "and they get people into the concert hall who would never have come to a classical-music concert otherwise. And once they're in the hall, they seem to enjoy everything. Sometimes they get very enthusiastic and shout right in the middle of a work—which doesn't bother me a bit."

Of course, there is an entirely serious side to Galway too, a side that will become even more evident as the rest of his European recordings find release in the U.S. Galway's British discography, for example, includes a French concerto disc, a Schubert recital featuring his transcription of the Arpeggione Sonata, and, most recently, a disc featuring the new flute concerto he commissioned from Joaquin Rodrigo. There is also a second (chronologically the first) recording of the Mozart flute concertos, which Galway recorded with the New Irish Chamber Orchestra at the start of his career.

"I don't think two recordings of the Mozart is too much," he insists. "Rampal's recorded them more than twice. But this other record was really just a business mistake: you see, the people who recorded it first were going to bring it out some time next century. So meantime we recorded them again for RCA, who wanted to bring them out immediately. The second version is a little different, though. In the G Major Concerto I improvised a cadenza in the last movement. But conductors don't really like it when you improvise, even at a cadenza. They like to know exactly what's coming, and I guess I don't blame them. I find that the older conductors are the best. I played in Berlin with Jochum recently, and he said to me in his raspy voice, 'Now, Jimmy, you must write out the cadenzas for me.' And I said, 'Okay, maestro, I'll write them out.' So I drew a big flower in the middle of the page with the cadenza inside it, and you can imagine how he looked during the concert, following the cadenza with his finger on the page. But he accompanied me marvelously."

One of Galway's main concerns, on records and off, is the expansion of the flute repertoire. A good portion of the material he's already recorded is taken from the repertoires of other instruments, although he insists that the flute repertoire itself is by no means limited. "I transcribe," he explains, "for the sheer joy of playing great music. I could go around like all the other flute players before me and play the same things they play. But playing The Four Seasons or the slow movement of the Mozart Clarinet Concerto is like being in heaven for a few minutes."

Not all of Galway's transcription attempts are successful. Last year he tried to transcribe Rodrigo's Concierto de Aranjuez, originally for guitar, but found that the flute could not do the work justice. Instead, he transcribed another Rodrigo guitar work, the Fantasia para un Gentilhombre, and also commissioned a flute concerto from the composer, one in a long series of Galway commissions that includes works by Sir Lennox Berkeley, Richard Rodney Bennett, John Mayer, and Henri Lazarof. The Lazarof work, Cadence V for flute and tape, was recorded by Galway and released last year on CRI 381.

"The kind of contemporary music I like is music with nationalistic roots. National feeling can be found in everything from Mozart and Beethoven to Tchaikovsky, Debussy, Ravel, Copland, and Gershwin. It's music of the people, presented on a plate by a master cook.

"As for avant-garde music, well, I don't go in for that much. Playing it usually means preaching to the few already converted. I'd rather convert the masses. A lot of people are into very technical things—multiphonics and all—but I've yet to hear a performance of that sort of music that has stood up in the concert hall and made people want to hear it twice.

"But the important thing, for me, is that I can bring all this great music to people and make them like it. And to do that, I've always got to be in top form. You can't afford to get lazy or to stop delivering. When I play with an orchestra, I very often hear that old line, 'Well, it'll be better at the show.' But I'm not interested in that. I want it perfect every time, whether it's a rehearsal, a performance, or a TV show, and whether it's in Carnegie Hall or a stadium in Akron, Ohio. I want to give my absolute best all the time, so that whenever I play, people leave the hall feeling that they've just been to the best concert they've ever heard."
Introducing the Bose® Spatial Control™ Receiver

The first and only receiver that lets you control the spatial distribution of sound. Focused and intimate for a soloist. Broad and spacious for a symphony.

The first and only receiver that puts you in command of every performance with six separate amplifiers. Instead of the usual two.

The first and only receiver that allows you to play equalized and unequalized speakers. Simultaneously.

The first receiver with built-in 901® Series IV equalization. That connects automatically when 901 speakers are playing.

When used with 901 Series III or IV speakers, special circuitry shifts energy between rear-facing speaker panels at your command to control the spatial distribution of sound from spacious (red) to intimate (blue).

The first receiver with expansion capability limited only by your imagination. With special switching logic to reconnect at the touch of a button, four power amplifiers, two headphone amplifiers, a 901 Series IV equalizer, special Spatial Control™ circuitry. And special provision for connecting time delay units for your ultimate future system.

To begin to appreciate the capabilities of the Bose Spatial Control™ Receiver, visit a friend who owns one, or an authorized Bose dealer. You have to hear it to believe what it can do.

BOSE®
Better sound through research

Covered by pending patent rights.
Cabinet is walnut veneer.
Yamaha, the industry

When we set out to improve our industry-acclaimed receivers, we knew we had a tough task ahead of us. How do you top being the first in such precedent-setting developments as built-in moving coil head amps, negative feedback MPX demodulators, pilot signal cancellation circuits, and the same amazingly low distortion throughout our entire line? After much continuing research effort and unique care in design, we have the answer. It's called the CR-2040, the first in Yamaha's new line of receivers that does what only Yamaha could do. Outdo ourselves.

**Unique continuously variable turnover tone controls.** This unique Yamaha innovation gives you the tonal tailoring characteristics of both a parametric and a graphic equalizer. Without the added expense of having to purchase either. For instance, in addition to boosting or cutting the bass control ±10 dB, you can vary the turnover frequencies between 100 & 500 Hz to compensate for speaker deficiencies, room anomalies, etc., for unparalleled tonal tailoring flexibility. The same is true for the presence and treble controls.

**Built-in moving coil head amp.** More and more listeners are discovering the beautiful experience of music reproduced with a moving coil cartridge, such as Yamaha's newly introduced MC-1X and MC-1S. Discover this exquisite pleasure for yourself with the CR-2040's built-in moving coil head amp. This ultra-low noise head amp provides an ultra-quiet 86dB/S/N ratio to assure you of capturing all the high-end detail and imaging the MC experience affords. All you'll miss is the extra expense and added noise of an outboard head amp or step-up transformer.

**Independent input and record out selectors.** If you're a tape recording enthusiast, this feature is something you won't want to be without. It lets you select the signal from one program source to send to the REC OUT terminals for recording while you listen through your speakers to an entirely different program chosen on the INPUT selector. You can also dub from one tape to another even while listening to an entirely different program. It's another example of why Yamaha is the industry leader. We build in what the others can't even figure out.

**Continuously variable loudness contour.** This control compensates for the ear's decreased sensitivity to bass and treble tones at low volume levels. And you're not limited to compensation at only one specific volume setting as with other manufacturers' on/off-type loudness switches. The Yamaha continuously variable loudness contour assures you of full, accurate fidelity at any volume setting you choose. Another Yamaha exclusive!

**Automatic operation.** Without a doubt, the Yamaha CR-2040 is one of the most automated receivers in audio history. Instead of fiddling with dials and meters you can sit back and let the automatic circuits do the work. Or if you choose, manually override the circuits. Take the AUTO-DX circuit, for instance. We developed IF bandwidth switching for our world-acclaimed CT-7000 tuner. Now we've gone even further by improving this circuit so the receiver automatically chooses the correct bandwidth (local or DX) for the least noise. Working with this circuit is the AUTO BLEND circuit which eliminates annoying FM hiss to make previously unlistenable stations more clearly audible. All without lifting a finger. And Yamaha's exclusive CTS (Optimum Tuning System) automatically locks in and holds the desired station when you release the tuning knob.
Human engineering. As incredibly advanced and complex as the CR-2040 is, it is incredibly simple to operate. The front panel is arranged in a clean and logical manner with the larger primary operational controls located on the central forward panel, and the smaller tone-tailoring controls located on the lower panel. It takes a minimum of effort to set up the CR-2040 for maximum listening pleasure.

The functionally beautiful front panel is complemented by a real wood cabinet with simulated ebony finish—the perfect finishing touch to the extraordinary CR-2040.

And the CR-2040 is just one of a whole new line of receivers from Yamaha. Each one offers, in its class, the ultimate in features, performance and pure musical pleasure. Visit your local Yamaha Audio Specialty Dealer and see and hear for yourself how we've outdone ourselves. He's listed in the Yellow Pages. Or write us: Yamaha, Audio Division, P.O. Box 6600, Buena Park, CA 90622.

From Yamaha, naturally.
Morton Gould: State-of-the-art Digital Recordings

Digital recording, described only months ago as "the sound of the future," has already made itself a real factor in today's record market, and its general superiority to other recording approaches is too apparent by now to require much discussion. The expanded dynamic range, the stunning transients, the "unmeasurably low" distortion, and the freedom from background hiss surely speak for themselves. Furthermore, the master tapes can be edited, and no additional components are required for playback on a two-channel stereo system.

Commensurate with the technical benefits is the seriousness of artistic purpose already so hearteningly apparent in digital releases from various sources. Instead of the Ping-pong games and roaring locomotives that helped usher in stereo more than twenty years ago, there has been real music of solid substance. Nippon Columbia, the digital pioneer, has emphasized chamber music among the hundred and fifty or so classical releases on its Denon/PCM label so far, and it has shown a similarly thoughtful attitude in its smaller jazz series. London, the first Western giant to get into the digital action, has followed its initial release of a live Vienna Philharmonic New Year's concert (reviewed in Stereo Review in June) with Mahler and Mendelssohn symphonies (they are reviewed by David Hall on page 142 of this issue); RCA has initiated its digital activity with the Bartók Concerto for Orchestra, performed by Eugene Ormandy and the Philadelphia Orchestra (to be reviewed next month), and is reading Mozart concertos played by Emanuel Ax with Eduardo Mata conducting the Dallas Symphony.

In the West, the giant companies face not only Denon's five-year lead, but also real competition from some enterprising smaller companies at home. Sound 80 has given us Copland and Ives played by the Saint Paul Chamber Orchestra under Dennis Russell Davies; Telarc presented a stunning disc of Borodin and Stravinsky with Robert Shaw and the Atlanta Symphony and is recording other U.S. orchestras; and now Chalfont has brought out its first three digital discs, all taped in London last year. Like the Telarc and RCA releases, these were recorded using Thomas Stockham's "Soundstream" system; they are the most impressive specimens of this recording technique I've heard outside the Denon series and probably the finest-sounding records yet pressed in this country.

A record of organ music played by Carlo Curley is especially intriguing because the instrument used is the Allen digital-computer organ in the Great Hall of London's Alexandra Palace. The phrasing in the Bach Toccata and Fugue in D Minor may border on the eccentric in spots (young Curley, according to a liner blurb, is known as the "Liberace of the organ"), but the performance hangs together well, and Curley's own arrangement of Jeremiah Clarke's famous Trumpet Voluntary (formerly attributed to Purcell) is the sort of tour de force anyone with ears must admire and enjoy. Most exciting, though, is the sound, far and away the most lifelike reproduction of an organ I have yet heard—so vivid, indeed, that I feel a little odd about calling it "reproduction." This will surely be the organ demonstration record for some time; it is the sort of thing that can turn audio buffs into organ fans, and vice versa.

The other two discs, offering attractive symphonic pops with Morton Gould conducting the London Symphony Orchestra, will appeal to a wider audience. One program is made up of delectable Spanish pieces (with the aforementioned seriousness of purpose further indicated in the form of annotation by the renowned Spanish scholar Gilbert Chase); the other, even more enticing, contains super-virtuoso performances of Ginastera's Estancia suite and Shostakovich's brassy Festive Overture, together with Ravel's Boléro and the polka and fugue from Weinberger's Schwanda. In the Spanish package some of the interpretations are not the most subtle or idiomatic, perhaps, and the polka rhythm does not take hold in the Weinberger as it does under Reiner or Kempe, but the handling of the fugue, and the balancing of the organ and orchestra at the end, are masterly, and so is the pacing of the Boléro. More to the point, the sound is so glorious that one simply revels in it. The LSO, obviously enjoying its assignment and its conductor, is at or near its peak on all four sides, and nothing, from an insinuating little counter-figure for clarinet in El Corpus en Sevilla to the incredibly live percussion in Estancia, fails to make its full effect. This is just the way a real orchestra sounds—or hopes to sound.

Some caution is advisable in playing these discs. The drum thwack at the beginning of the Tricorne excerpt sent the needles on my power meters from a shade above 2 watts to a shade under 200. This sort of thing could knock out a speaker or overload an amplifier in a...
less-than-heavyweight playback system. I would suggest starting out at a modest volume level and cranking up gradually to what you feel yours can safely handle—and then just let yourself be amazed. The dynamics in the Boléro (which is, after all, a seventeen-minute crescendo) are ideally graded for home listening, that the whisper level of the opening music allows one to hear surface or background noise that is unnoticeable elsewhere on the disc, and that the conclusion rips the roof off but does so more cleanly than you are likely to have heard it done even in a concert hall.

Chalfont is now associated with Varese Sarabande, and two further discs from the same series of recording sessions (all produced and engineered in England by Jerome Ruzicka and Brian Culverhouse—see “Exploring the Digital Frontier in Watford and Tooting,” December 1978 Stereo Review) are scheduled for release on the latter label by the time these words appear in print. Both are again with the LSO under Gould, but this time they are being pressed in Japan by JVC. One is made up entirely of Gould’s own compositions, including the marvelous Latin-American Symphonette and the Philharmonic Waltzes; the other is devoted to movie music. presenting Walton’s Spitfire Prelude and Fugue and the epilogue from Bliss’ score for Things to Come as well as excerpts from Gould’s own Windjammer and other Hollywood scores. I look forward to enjoying these as much as the three Chalfonts, which I have been playing daily since I received them and which further validate the judgment that digital recording is the most significant development affecting home listening pleasure since the introduction of electrical recording more than fifty years ago.

—Richard Freed


The Clash’s New Album: Putting the Punk Phenomenon in the Perspective It Deserves

It’s too bad so few people got to see the Clash on their over-in-the-wink-of-an-eye American tour, because the press hype on them was so adulterous that the average rock fan was, with good reason, pretty skeptical. Nobody could be as good as the critics were saying these guys were (at least that’s what I thought), and “Give ‘Em Enough Rope,” the album released concurrently with the tour, was thin-sounding enough to make you wonder what the fuss was all about.

I caught the band’s New York show, and I walked out slack-jawed, an instant (if belated) fan. It was the kind of raucous yet controlled outpouring of sound that inspires dreams and sends you out into the night feeling two feet off the ground. Had they followed Bruce Springsteen as the final segment of ABC’s documentary Heroes of Rock ‘n’ Roll, America would finally have been able to place the punk phenomenon in the perspective it deserves.

Anyway, here at last is the Clash album for people who still don’t get it. Epic has cannily taken nine cuts from their English debut album and fleshed it out with singles the group has graced us with so far in their brief, brilliant career. The result is that you hear what Lester Bangs has called “that rarest of rare birds—a band growing before you.” By the end of side one, which closes with a revelatory new version of the venerable I Fought the Law (it transforms the original’s rueful bragadocio into something almost heroic), you realize you’re listening to an outfit that has long since transcended the narrow confines of mere punk and evolved into what is simply the last great hard-rock band in the world. The only applicable parallels are with the finest work of the Stones, the Who, or the MC5.

Simon Frith has observed that most English audiences come away from Clash gigs feeling like better people, and while we Yanks can’t pretend to understand the social ferment that brought these guys to the fore at home, on purely musical levels “The Clash” is the kind of record that gives you an inkling of what he meant. At the risk of sounding maudlin: I find listening to it somehow cleansing. With most of mainstream rock (and virtually all disco) mired on the level of “screw the world, let’s party,” the Clash provides a ringing affirmation that there’s more to life after all and proves that music can still matter in ways undreamed of in the philosophies of the minions of Robert Stigwood. All that and a backbeat too. If the rock-and-roll idealist in you has been out to lunch for the last
couple of years, you simply have to hear this album.

—Steve Simels

THE CLASH. The Clash (vocals and instrumentals). Remote Control: Clash City Rockers; I'm So Bored with the U.S.A.; Complete Control; White Riot; White Man in Hammersmith Palais; London's Burning; I Fought the Law; Janie Jones: Career Opportunities; What's My Name; Hate and War; Police and Thieves; Jail Guitar Doors; Garageland. Epic JE 36060 $7.98, © JET 36060 $7.98.

First Recording: Dmitri Shostakovich's Brilliant—and Bawdy—Lady Macbeth of Mtsensk

LADY MACBETH OF MTSENSK is one of the most famous works of twentieth-century music, but its reputation is by no means purely musical. By 1934, the year Lady Macbeth was written, Dmitri Shostakovich was the enfant terrible of Soviet music. In the early days of the Russian Revolution many advanced artists and philosophers naturally tended to identify revolutionary art with political change. Shostakovich was of the next generation, a brilliant talent who was completely a product of the Soviet period—the new Soviet musical man, one might say. His First Symphony was a sensation, and every new work by the young composer created a furor of excitement. I would not, however, describe Shostakovich's style as avant-garde in any sense. It is a very neat amalgam of modernism, Mahlerism, Russianism, Neo-Classicism, populism, and sassy—the perfect new style for the new, brash, young Soviets.

Unfortunately, Stalin didn't see it that way. The good dictator caught up with Lady Macbeth in 1936 in Moscow. He was so enraged at what he heard that he stalked out, and the next day Pravda printed bitter denunciations not only of the work but of its composer. Overnight a great success was turned into a non-work. The long Stalinist night had begun, in art as in every other aspect of Soviet life. Some of the more radical artists and composers actually vanished, from the public eye at least. Others, including Shostakovich, made long and painful recantations and seriously attempted to reconcile their personal styles with the demands of "socialist realism" as Stalin and his henchmen interpreted it. Only in 1958, after Stalin's death, did Shostakovich venture to take advantage of the so-called cultural thaw to bring out a revised version of the opera under the name Katerina Ismailova. Now, however, Angel has given us a recorded restoration of the original work, and, whatever its shortcomings and brutalities, it is indisputably a powerful one.

It is the presence in the West of Shostakovich's friend and colleague Misislav Rostropovich and his wife, the soprano Galina Vishnevskaya, that has made this recording possible. That plus the half-Russian tenor Nicolai Gedda, the Bulgarian bass Dimiter Petkov, and a bunch of Scandinavians who seem to be able to manage a more than passable singing Russian—for, of course, it would have been inconceivable to record this very Russian Russian opera in any other language.

How does Lady Macbeth appear after all these years? Well, alas for the tender sensibilities of Josef Stalin, this is, even today, pretty raw stuff. Katerina Ismailova, our provincial Russian Lady Macbeth, takes a lover out of sheer boredom and then wipes out everyone who stands in her way—until the bumbling police catch up and shuffle 'em off to Siberia. There are the cold-blooded murders; the brutal personalities of all the characters; the picture of a pre-Revolutionary society dominated by boredom, violence, and corruption. And there are some absolutely animalistic sex scenes rauschoriously scored by the composer in a style one critic has dubbed "pornophony."

Whatever one's feelings about this work and its highly ambivalent moral and musical tone, it must be admitted that, in a perverse way, it belongs in the great tradition of passionate, larger-than-life tragedy; think of Manon, Cavalleria, or even Tristan. And, bawdy and sensationalist though it may be, it is much too brilliant a work to be consigned to the dustbin of history, particularly by a boor and a murderer (you might call that crocodilian morality). The Shostakovichian wit—not stylish like the French but gutsy—is everywhere. The composer never surpassed his early works for invention, originality, and even emotional impact.

This recording is a brilliant realization—really an act of love—on the part of Rostropovich and Vishnevskaya. Vishnevskaya, who is such a variable singer, has never sounded better—and in music that might have been conceived for her. This non-Russian-speaking listener found most of the vocalism highly convincing and Rostropovich's conducting breathtaking in its level of excitement.

Will Lady Macbeth make it back to the stage in this country? I say "back" because, if I am not mistaken, the work was conducted by Stokowski in the 1930s in Philadelphia and New York (at the Met but not produced by it). In some ways it was easier to get an opera like this—new or old—on the stage then than it is now. We don't (knock wood) have any cultural Stalinism in this country, but it cannot be denied that the economic closeout of new ideas in music theater can be just as effective.

—Eric Salzman

SHOSTAKOVICH: Lady Macbeth of Mtsensk. Galina Vishnevskaya (soprano), Katerina Ismailova; Nicolai Gedda (tenor),
Another Taste of Honey: There's Something New To Discover with Every Replay

The Grammy award-winning "best new group" for 1978 has scored another triumph. Boogie, Oogie, Oogie girls Janice Johnson and Hazel Payne, with their back-up team, have delivered an elegant, up-mood album that is mostly for dancing but will also yield rich rewards for those who simply listen. In fact, each time I play it I listen more. The two singers are so resourceful and the arrangements so startlingly fresh that there's something new to discover with every replay: a flute obbligato, a Forties rhythm, an exquisite harmony, exotic syncopations. The best moment among so many good ones is Take the Boogae or Leave It, which deserves to be as big a hit as Boogie, Oogie. In this cut, disco gets what is probably the most intricate vocal treatment in its brief history: jazz-based close harmony of astonishing versatility—it's so good! And I must put in a good word too about I Love You, in which Janice and Hazel work absolute wonders with a series of variations on those three little words to a gentle reggae/disco beat.

Taste of Honey's classy arrangements and shining musicianship confirm the impression that they are something new and special: a fusion of jazz, dance music, and talent.

—Edward Buxbaum

Della Reese and Jazz à la Carte In a Very Live Album Of Vintage Jazz

One of a Kind" is the third album produced by the Jazz à la Carte players, a group of musicians who claim they got the idea of starting their own record company after their producer, Terry Gibbs, created a sensation on the vibraphone at a restaurant party in Playa del Rey, California. The party was being held, it seems, in honor of the 101st anniversary of the birth of Sherlock Holmes' mother, but don't let that put you off. The six performers in the group really make great music, and with the addition of Della Reese, applying her lusty style and splendid musicianship to turning old standards into fresh experiences, they have put together a first-rate album.

Whether she is fixing her intelligent attention on sleek Cole Porter ballads such as Ev'ry Time We Say Goodbye and Get Out of Town, being upbeat and exuberant with Irving Berlin's The Best Thing for You Is Me, or serving up the old blues clichés in a zesty new blend in her own Everybody's Blues, Della Reese lives up to her liner-note billing as "a jazz-singer's jazz singer." It scarcely seems possible that anybody could breathe fresh vitality into Mack the Knife at this late date, but Della does it as a samba, and it works. She converts I'm Old Fashioned into something more affecting than tired camp, and her grandstand treatment of Make Someone Happy as a finale made this listener very happy indeed.

The support she gets from the group could not be more expert or more appropriate, and the recorded sound, captured in this instance in a van outside the restaurant where the singer was performing, is exceptionally alive.

Even the audience applause sounds, for once, real enough that you want to join in. (And I should not omit to mention that label credit for Mack the Knife goes to Kurt Vile!)

—Paul Kresh

Della Reese and Jazz à la Carte: One of a Kind. Della Reese (vocals); Lou Levy (piano, conductor); Jimmie Smith (drums); Kenny Burrell (guitar); Bob Magnusson (bass); Bob Cooper (tenor sax); Chile Charles (conga drums). Close to You; Ev'ry Time We Say Goodbye; After You've Gone; The Best Thing for You Is Me; Everybody's Blues; Mack the Knife; Get Out of Town; Little Boy Lost; I'm Old Fashioned; Make Someone Happy. JAZZ À LA CARTE VOL 3 $8.98 (from Jazz à la Carte, 7319 West 87th Place, Los Angeles, Calif. 90045).
Our 7" reel is designed to gather tape. Not dust.

Something as insignificant as a speck of dust can mess up a perfectly good recording.

So at Maxell, we’ve developed an ingenious device that keeps dust from collecting on our tape. Our take-up reel.

Instead of gaping holes that let dust in, our specially molded poly-styrene design actually forces dust out.

So if your take-up reel is picking up more than it should, pick up ours. You’ll find it comes attached to something even more impressive. Our tape.
ABBA: Voulez-Vous. Abba (vocals and instruments). I Have a Dream; Does Your Mother Know; If It Wasn't for the Nights; As Good as New; Angeleyes; The King Has Lost His Crown; and four others. ATLANTIC SD 16000 $8.98, © TP 16000 $8.98, © CS 16000 $8.98.

Performance: Delightful hooey
Recording: Clean

You may not believe it, but Abba is worried. Despite all the group's hit singles over here and its near domination of the European market, they still feel they have not made it big in the United States of Buckland. So, with this album, an all-out merchandising campaign begins. An insert in the sleeve advises consumers that they can now purchase Abba caps, T-shirts, belt buckles, jackets, wrist watches, bracelets, souvenir books, posters, and even a complete fan-club kit, proudly demonstrating their allegiance by paying to display the group's registered trademark.

Abba has certainly made every musical effort to ingratiate themselves with Americans, and they're more skillful at it than the British were in the Sixties. There isn't a single note, riff, figure, throat warble, or rhythm scheme in Abba's music that isn't based on what has been done or is being done in the United States. One marvels at the clinical precision of their pastiches. But despite the corn, the commercialism, and the pandering, on any Abba album there is usually one knockout song you can't stop playing. This time it's I Have a Dream, which could be sung effectively by anyone from a night-club doxy with fifty-pound eyelashes to a company of Girl Scouts. Abba, Abba! Despite my brain's saying "no," my heart says "yes." There's no other group for which I am so willing a sucker. See if it doesn't happen to you too. J.V.

AMERICA: Silent Letter. America (vocals and instrumental). Tall Treasures; No Fortune; 1980; All Night; Only Game in Town; and six others. CAPITOL SO-11950 $7.98, © 8X01-11950 $7.98, © 4X01-11950 $7.98.

Performance: Marking time
Recording: Excellent

America consists of lead singers/songwriters Dewey Bunnell and Gerry Beckley and their back-up band (the group began as a trio some six years ago). Their first hit was the laconic A Horse with No Name, which on first hearing sounded like Neil Young. They went on to have other hits with albums produced by George Martin of Beatles fame. Martin is known for the distinctive, clean sound of any record he produces, and in the case of the Beatles he contributed ideas that helped make their recordings the classics they are. But even a producer as accomplished and professional as Martin cannot perform for his act. America always has a certain charm, but Bunnell and Beckley depend mostly on their own material, and this time around it's only so-so. The strongest cut here, Only Game in Town (released as the single), is not by them, and the others are just filler. J.V.

PAUL ANKA: Headlines. Paul Anka (vocals); vocal and instrumental accompaniment. Headlines; Andi; Life Song; Together Again; and five others. RCA AFLI-3382 $7.98, © CT-1-6200 $7.98.

Performance: True glitter
Recording: Excellent

"Headlines" is such a glittering job of haute-commercial record making that I'm a bit in awe of it. Paul Anka's perfectionism is such that there isn't a note left unspotlighted, a phrase left unaccented, or a state-of-the-art embellishment left unused in either the performance or the production. The repertoire, however, is considerably below form for Anka, with a couple of dank posies of his own offered up along with such wilted corsages as his collaborations with Sammy Cahn (Headlines) and with Alan and Marilyn Bergman (Leave It All to Me). Anka performs everything with his usual enormous self-confidence and razzle-dazzle showmanship, and when it all falls together, as it does at least once here (in Learning to Love Again with its superb up-front arrangement by Domenic Frontiere), it's like being on the inside of a roman candle. Unfortunately, like fireworks, the glow fades away fairly quickly. P.R.

RECORDING OF SPECIAL MERIT

ATLANTA RHYTHM SECTION: Underdog. Atlanta Rhythm Section (vocals and instrumental). Do It or Die; Born Ready; I Hate the Blues/Let's Go Get Stoned; Indigo Passion; and four others. POLYDOR PD-1-6200 $7.98, © 8T-1-6200 $7.98, © CT-1-6200 $7.98.

Performance: Crafty
Recording: Very good

The Atlanta Rhythm Section can't be blamed if the idiots who've tight-playlisted the radio almost drove us all nuts with So Into You, and even if they could, their new "Underdog" album would be suitable atonement. I don't know about underdogs, but the ARS is working understatement the way it was meant to be worked, and the album contains some of the cleanest, most satisfying, and most laid-back rock I've heard lately. This lack of, or avoidance of, excess, from Ronnie Hammond's almost pristine, almost crystalline vocals on through every instrument, should not be confused with the dispassionate dry competence that has afflicted so many rock bands of this era. The ARS songs have themes to them, and the band obviously cares about writing and presenting them. The solos are not wildly

Explanation of symbols:

- = quadraphonic disc
- = open reel stereo tape
- = eight-track stereo cartridge
= stereo cassette
= digital-master recording
= direct-to-disc recording

Monophonic recordings are indicated by the symbol ©

The first listing is the one reviewed; other formats, if available, follow it.
original, but they are sensitive and sensible. The timing is delicate, and so is the overlay of instruments—too delicate for "good planning" to account for, look instead for good instincts, which also account for some holes going effectively unfilled. Possibly the radio will latch onto one or two of these songs and almost drive me nuts again, but at the moment I'm having a hard time finding anything in "Underdog" to complain about. Maybe RCA can complain that the dog on the cover looks like its Little Nipper, but then RCA is connected with NBC, the biggest underdog around right now.

N.C.

CHARLES AZNAVOUR: We Were Happy Then. Charles Aznavour (vocals); instrumental arrangement. WARNER BROS. BSK 3355 $7.98, © M5 3355 $7.98.

Performance: For fans
Recording: Good

THE B-52's. The B-52's (vocals and instrumental arrangements). Planet Claire; 52 Girls; Dance This Mess Around; Rock Lobster; Lava; There's a Moon in the Sky (Called the Moon); and three others. WARNER BROS. BSK 3355 $7.98, © M5 3355 $7.98.

Recording: Excellent

P.R.

The B-52's are pretty shrewd. Not only are they the first truly fey punk band in history, but Aznavour only manages to sound hysterically as he goes from one crise d'amour to another. His fans, however, often as excitable as Charles himself, will probably agree with his fans this time: no Springsteen giveaways, oldies, or instant Van Zandt make-out classics. The result? An inconsistent, occasionally wonderful record that is often too delicate and melodically memorable but is cursed with some wacky lyrical excesses that don't bother me unduly if I avoid the lyric sheet (Johnny's singing is so gutbucket compelling that I generally couldn't care less if he's spouting nonsense).

When everything comes together, in fact, this is riveting stuff. All I Want Is Everything, which mates Graham Parker with the Jukes' trademark Jay and the Americans Latin influences, is a kind of neo-punk Rebel Without a Cause, something a romantic like Van Zandt could never have penned for them, and I'm So Anxious (which has the juiciest horn riff since the halcyon days of Sam and Dave), Paris (Johnny has joked that it's about Detroit), Living in the Real World, and Vertigo are major successes that effectively nudge the Jukes even further into the mainstream while still maintaining stylistic links with their past. Two of guitarist Billy Rush's songs are less felicitous, however. Security is a nice enough blues tune with wry lyrics, but Rush's affected Dr. John drawl is unconvincing and wears thin rather quickly. Worse, Your Reply makes the mistake of talking directly to God; somehow the idea of a street kid from Jersey waiting for a Mailgram from the Big G strikes me as a bit of overreach.

But, then again, that has always been part of the Jukes' charm, and that a bunch of white sleazes from Asbury Park should turn out to be standard bearers for Sixties black music is the cream of the crop. Asbury r-&-b purists will doubtless lament the direction "The Jukes" points the band in, but I suspect that where they're going is potentially even more exciting than where they've been. If their last album, "Hearts of Stone," was the contemporary equivalent of "The Rolling Stones Now," which is to say the summation of a particular school of blues-inflected rock, then this new one suggests that once they get a few more bugs out of the synthesis they're pursuing, their most mature and considered work is still ahead of them.

In the meantime, "The Jukes" rates as one of the better albums of 1979, and if nothing else it should put to rest once and for all the idea that these guys can't cut it without the rest of the Jersey Mafia to help them out. Clearly, they can.

—Steve Stinels

SOUTHSIDE JOHNNY AND THE ASBURY JUKES: The Jukes. Southside Johnny Lyon (vocals); the Asbury Jukes (vocals and instrumental arrangements). All I Want Is Everything; I'm So Anxious; Paris; Security; Living in the Real World; Your Reply; The Time; I Remember Last Night; Wait in Vain; Vertigo. MERCURY SCL-1-3793 $7.98. © MCR-1-3793 $7.98.
The Kinks Make a New Bid

SIMPLY put, what happened as the Seventies progressed was that people went from saying they could change the world to saying they couldn't. They went from "tell me more" when one started to talk—or sing—about the gory details (war, racism, pollution, whatever) of how we live now to "I don't want to hear about it." They went from Godard and Truffaut to Star Wars and Superman. They went from rock with a highly developed social conscience, like that of the Kinks, to disco and other would-be-apocalyptic, would-be-escapist things. But the Kinks are still around, and they still have a constituency nowadays to listen to any words, even those in "Low Budget." The whole album is thematically a pretty good shot at the Situation Now, and I can't find much fault with how it's worked for the times. The Kinks have lost, over the past three or four years, the looseness and unpredictability in their sound. They used to sound as if somebody were about to hit a wrong note any minute, but now they just sound like a veteran rock band—except, of course, you couldn't get Ray's fey vocals anywhere else.

So this one is a risk-taker, with Davies gambling that he can get through to his fans again with words that one can really care about, or admit that they still care, otherwise it's either quit or write "Ah love mah baby" songs. I hope he gets a hearing, for his kind of commentary seems to be what we need as the Seventies exit quietly, with a fixed grin.

—Noel Coppage

THE KINKS: Low Budget. The Kinks (vocals and instruments). Attitude; Catch Me I'm Falling; Pressure; National Health; (Wish I Could Fly Like) Superman; Low Budget; In a Space; Little Bit of Emotion; A Gallon of Gas; Misery; Moving Pictures. ARISTA AB 4240 $7.98. © ATS 4240 $7.98. © ATC 4240 $7.98.

rest of it? I think I prefer my Ride the Wild Surf straight.

S.S.

DAVID BOWIE: Lodger. David Bowie (vocals, keyboards); Dennis Davis (drums); George Murray (bass); Carlos Alomar (guitar); other musicians. Fantastic Voyage; African Night Flight; Move On; Red Sails; D.J.; and five others. RCA AQL1-3254 $8.98, ® AQS1-3254 $8.98, © AQK1-3254 $8.98.

Performance: Muddled

Recording: Average

Well, Bowie does make you suspect he has intelligence—the album just before this, for instance, had a certain, um, elan about it—and so you listen. And usually picture him laughing all the way to the bank while you're actually trying to sort out the gobbledygook. That's what I'm doing this time, but at least I didn't have to pay for the damned thing. Bowie has always killed off his background—about the only real thing we've ever known about him is that he's afraid of flying (and in Move On here he mentions boats and trains but not planes). Now he's killed off the Ziggy Stardust and Ch-Ch-Changes phase, but in this one he seems to be a character in search of an author. He's leaning toward being something between Lou Reed and John Cale; accordingly, Brian Eno, the all-time number-one avant-rock groupie, blessed the project and helped write some of the so-called melodies. But Bowie doesn't really have his latest part sorted out. He can't decide whether to be cryptic and mysterious and maybe throw in a little stream of consciousness or to identify with the street crowd. His lines here are mostly short and mostly futile, given some of the high-flown themes he hints he's trying to illuminate; outside of the straightforward (and mediocre) Fantastic Voyage, the best you can hope for are a few limp language games set to some of the year's most boring and empty tunes.

N.C.

CATE BROTHERS BAND: Fire on the Tracks. Ernie Cate (vocals, keyboards); Earl Cate (vocals, guitar); Terry Cagle (drums, vocals); Ron Eoff (bass, vocals). Time Is a Thief; Looks Like You Made It; I Won't Wait; In So Deep; Fire on the Track; and five others. ATLANTIC SD 19240 $7.98. ® TP 19240 $7.98. © CS 19240 $7.98.

Performance: Good, but frustrating

Recording: Very good

There's much to admire about this—stylish vocals, disciplined instrumental, clean and intelligent guitar solos, pleasant melodies—but it has what I call the Jimmy Reed Syndrome: the songs are all alike. Well, not quite all, but too many have the same tempo, the same narrow, straight-ahead structure, and probably (I don't have an instrument around at the moment to check this) the same key. Gives it a sort of drone-like quality, and that's too bad, for the Cate Brothers, one song at a time, are good. They still may be my favorite blue-eyed-soul act (admittedly that's not a very crowded field in the landscape of my mind), and there are two or three tasty singles in this brew, but if you try to chugalug the whole thing you'll wind up in a daze.

N.C.

THE CLASH (see Best of the Month, page 92)

(Continued on page 100)
The traditional tone arm has been replaced by Linatrack. A revolutionary tracking system developed by Revox.

This sophisticated and highly refined electronic servo-system ensures that your records are played just the way they were cut, with perfect tangential tracking.

We've eliminated the causes of distortion inherent in conventional tone arm design. There's no need for an anti-skating device because there is no skating force. Our unique LED/photo diode array monitors the stylus angle and makes instant corrections to keep the tip absolutely perpendicular.

Pivot friction has also been dramatically reduced by our unique single-point jewelled pivot/magnetic support and suspension system.

With Linatrack, tracking error is reduced to a phenomenal 0.5° or less, virtually eliminating distortion and protecting your records from excessive wear.

The high torque direct drive motor of the Revox B790 uses Hall-Effect magnetic sensors tied to a quartz crystal to constantly read and instantly correct rotational speed. This eliminates the moment-to-moment deviations found on even the most expensive conventional direct drive motors. You can verify speed accuracy with the fast responding LED digital readouts. The readouts also provide an accurate log of manual speed adjustments.

Even with its advanced features, the Revox B790 is a pleasure to operate with safe and convenient automation. It works with virtually every cartridge and is ruggedly built to stand up to years of daily operation.

For more good reasons to play your records without a tone arm, experience the B790 at your Revox dealer today.
Joni Mitchell’s album “Mingus” is going to catch considerable flak for being ponderous where the late Charles Mingus was light-hearted, for being tight to uptight where he was loose, and for being un-Mingus-like in general. And the flak launchers will be right, in their own context. I’m no Mingus expert, but my impression is that, in addition to being something of a mystic off the stage, he was a catalyst for improvisation and a sort of bridge between traditional and “modern” (as in far-out) jazzmen on the stage. No doubt this is between traditional and “modern” (as in far-out) catalyst for improvisation and a sort of bridge
duly in the last few albums. Where she used to dart self-consciously into and out of falsetto, like changing gears in an old MG, she now glides with confidence over a remarkable number of notes and makes no big deal of it; it seems normal and effortless. Her voice has become, as jazz likes its voices to become, an instrument.

I find “Mingus” more listenable than “Don Juan’s Restless Daughter,” although not by much. It is too bad she couldn’t have loosened up the way Mingus would and haves. The thing is bound to lose her some of her more casual fans, who were attracted to a nice folk singer from Canada, but, like Ingrid Bergman, she has a number of diehard fans who’ll hang in there, and I guess that includes me (I don’t know whether I’m bragging or not, but I have a few records, as well as the Mingus album, and I still like it). The most “accessible” song is probably The Dry Cleaner from Des Moines, which unfortunately catches Joni getting a little too cute with the lyrics. The song is about luck; just before it there’s a taped comment by Mingus about how good his had generally been, but Joni’s lyrics, tongue-in-cheek or not, are above her self-consciousness. In her liner notes, Joni gives credit to the musicians involved in the out-takes (surely a first in the giving-credit department); these included John McLaughlin and Gerry Mulligan. Of those who made it to the finals, so to speak, only Wayne Shorter truly seems to have the necessary style. ‘Is this the world, Joni, you didn’t think the bass of Jaco Pastorius (of Weather Report) would have a leading role, but here it’s just another bass. On the other hand, there’s something to be said for putting this tight a rein on Herbie Hancock.

Mingus died, as Joni further notes, in Mexico on January 5, 1979, at the age of fifty-six, and his body was cremated the next day. “That same day fifty-six sperm whales beached themselves on the Mexican coastline and were removed by fire. These are the coincidences that thrill my imagination.” Now, that, I think, is a Mingus-like observation (or Jung-like—he called such coincidences “synchronicity”). Where jazz is concerned, though, I like to think Joni Mitchell is still working on it, diligently if not always sufficiently, and she’s by no means finished.

JONI MITCHELL: Mingus. Joni Mitchell (vocals; guitar): Jaco Pastorius (bass); Wayne Shorter (soprano sax); Herbie Hancock (electric piano); other musicians. God Must Be A Boogie Man; A Chair in the Sky; Sweet Sucker Dance; The Dry Cleaner from Des Moines; Goodbye Pork Pie Hat. ASYLUM 5E-505 $8.98 © 5C5-505 $8.98. © STS-505 $8.98 © STS-505 $8.98. © SCS-505 $8.98.

TIM CURRY: Fearless. Tim Curry (vocals); instrumental accompaniment. Right on the Money; Hide This Face; I Do the Rock; Hide This Face, Charge It. A&M 8T 4773 $8.98. © CS 4773 $8.98. © CS 4773 $8.98. © CT 35730 $8.98.

Performance: Funny but spotty. Recording: Loud

Tim Curry is the demonically energetic British actor who portrayed Frank N. Furter in the stage and film versions of The Rocky Horror Show. He has a gift for accents, and his tour de force on this second album is I Do the Rock, which is not a song so much as Noël Coward-type patter on the political, social, and jet-set personalities of the day, backed up by a riff. It is very funny patter, and Curry conserts with appeal only to a cult and upper-crust British, Indian, and a kind of erguson Spanish—all of which blend into each other. The words are unintelligible in spots, but you can still appreciate his zany brilliance.

Curry is basically unsubtle, however, and his magic doesn’t sustain itself. He is often bombastic in trying to please Charlie and still be true to his energy with some difficulty. The lunatic comedy will appeal only to a cult and the ballads and de facto rock-and-roll suffocate Curry’s personality. But there are some interesting moments.

J.V.

RECORDING OF SPECIAL MERIT

EARTH, WIND & FIRE: I Am. Earth, Wind & Fire (vocals and instrumental accompaniment). In the Stone: Can’t Let Go; After the Love Is Gone; Boogie Wonderland; Star; and four others. COLUMBIA FC 35730 $8.98. © FCA 35730 $8.98. © FCT 35730 $8.98.

Performance: Down to earth. Recording: Very good

As Earth, Wind & Fire have strengthened their grip on success, the mystical and extraterrestrial emblems adorning their albums have gained proportionately in grandiosity. They have taken themselves to one, with the Emotions lending their own majesty of Jehovah and an inside cover featuring a portrait of the group costumed and posed as princes out of fable, is no exception. Such bombast may be considered forgivable in this case, however, because of the excellence of the music on the record. As usual, this astral outfit blasts off in a balls-of-fire flurry of rhythm, which is cleverly varied through the album, even within selections, without losing its driving thrust. There is some evidence of capitulation to disco, particularly on Boogie Wonderland, to which the Emotions lend a few spirited soprano embellishments, but the emphasis throughout is on a dazzling interplay between precision ensemble voices—employed like horns—in rapid, robust exchanges with the group’s instruments augmented by a large orchestra. The opening track, In the Stone, is less imaginative than many of Earth, Wind & Fire’s previous efforts, but performing gusto compensates for the slim substance. My favorite is After the Love Is Gone, which is laced with unexpected Wonder-ful progressions. (Continued on page 102)

STEREO REVIEW
The owner of a Ferrari knows his car is much more than transportation. It'll get you there, but with a difference. A difference that comes from years of dedication to building precision machinery with an emphasis on performance and pleasure.

Similarly, anyone who uses the new Eumig FL-1000 immediately recognizes how much better it is—and how much more it does—than any other cassette deck. Much like the Ferrari, it is built for total satisfaction, to give top performance and instant response, where the competition just works.

The FL-1000 has the most sophisticated microprocessor ever used in a cassette deck. It's so sophisticated, in fact, that it can be directly interconnected with most popular minicomputers through its standard IEEE buss for data storage and retrieval or automated music programming. The microprocessor provides logic—perfect tape transport supervision, plus automatic programmable stop and repeat. There's even an automatic searching mode to select any programmed point on the tape just by punching digits on the keyboard. The tape counter is purely electronic, with digital readouts, and the motor automatically slows when it approaches your selection and stops at the perfect point so you hear only what you programmed.

Our Computest automated test system and 400Hz and 14kHz test oscillators help you set optimum bias, equalization and Dolby levels for any tape, including the newest pure metal formulations. And our superb switchable limiter circuit—absolutely undetectable in operation—assures distortion-free recordings with any tape or sound source.

Instead of clunking solenoids, the FL-1000 uses two electronically controlled motors for mechanical functions and to move the tape. The capstan motor incorporates Eumig's unique optoelectronic control. Instead of heavy flywheels and cumbersome belts, we use a low-mass disc with 2500 precisely photo-etched lines that are read by an optical sensor at the rate of 15,000 pulses per second. Speed correction is instantaneous, and wow and flutter are kept to an insignificant 0.035%.

Naturally the Eumig FL-1000 has three heads and double Dolby for true monitoring. And added flexibility is provided by two mixable stereo inputs with a cross fader, reverb without patch cords, fixed and variable outputs, fluorescent level meters with peak hold, and even a readout that says "END" when the tape is finished.

If you want to understand and appreciate a fine car, a test drive is best. It's much the same with the FL-1000; so visit your Eumig dealer to audition the FL-1000 and the companion tuner, preamp and power amp. To set the right mood, make the trip in a Ferrari.
sions. Some will say that this highly creative group has gone disco. If so, I hope more disco albums like this one will follow.

**RECORDING OF SPECIAL MERIT**

DAVE EDMUNDS: Repeat When Necessary.

Dave Edmunds (vocals, guitar); Rockpile (vocals and instrumentals); other musicians. Girls Talk; Crawling from the Wreckage; Dynamite; and eight others. Swansong SS 8507 $7.98. © TP 8507 $7.98. © CS 8507 $7.98.

Performance: Exhilarating as usual

Recording: Fine

Nothing new here. Edmunds continues to rock out a tad harder than his co-worker Nick Lowe (this can be looked upon as part two of Lowe’s “Labour of Lust.”) and I just wish that the two of them would get on the same label so they could release these projects as double albums, but as usual he leavens everything with enough pop sweetness that his Fifties obsessions don’t become troubling. Some of this stuff, in fact, is the most compelling neo-rockabilly he’s given us yet, in particular Graham Parker’s new Crawling from the Wreckage and Sweet Little Lisa, the latter with a mindboggling flash solo by guest guitarist Albert Lee (presumably on loan from Emmyyou Harris’ band).

The standout track here, however, is Girls Talk, another in what seems like an endless series of nasty-but-nice instant classics from the pen of Elvis Costello, who continues to make misogyny sound like more fun than it actually is. Edmunds sings it through his nose while the guitars roar and the hooks grab you. It’s already (deservedly) a Top-10 hit in England, and if American radio programmers would only remember that there’s a rock audience out here too I wouldn’t have to tell you what a beauty it is—you’d already have heard it. Meanwhile, the rest is the usual Edmunds mix—a little blues, a little country, a little vintage schlock—all of it quite exhilarating. Danceable, too. Highly recommended. S.S.

**ELECTRIC LIGHT ORCHESTRA: Discover.**

Electric Light Orchestra (vocals and instrumentals). Shine a Little Love; Confusion; Need Her Love; The Diary of Horace Wimp; Last Train to London; and four others. Jet FZ 35769 $7.98, © FZA 35769 $7.98, © FZT 35769 $7.98.

Performance: Recording: Good

Ordinarily, the Electric Light Orchestra turns out delightful, harmless albums of pure pop rock. I am distressed to report that this time out leader Jeff Lynne, for reasons or excuses I cannot fathom, has made a bow to the Bee Gees; several of the tracks have a falsetto/castrato vocal attack, and the drumming is keyed to boom-boom disco. Granted that it is hard to follow an album as charming and pleasing as ELO’s last one, this disc is still a weak effort. What it lacks most of all is the saving grace of humor that usually sustains ELO. The one attempt at humor here, The Diary of Horace Wimp, is forced and unconvincing. But Lynne is a resilient fellow, so I expect he’ll bounce back in good form on the album after this one. I hope so, anyway. J.V.

**NICK GILDER: Frequency.**

Nick Gilder (vocals); vocal and instrumental accompaniment. (You Really) Rock Me; Time After Time; Worlds Collide; and four others. Chrysalis CHR-1219 $7.98, © 8CH-1219 $7.98, © CCH-1219 $7.98.

Performance: Recording: Good

Nick Gilder is a veteran singer/songwriter who finally scored in 1978 with the hit single Hot Child in the City. He writes with James McMurloch and sings much in the manner of Reg Presley of the Troggs, giving us high-pitched vocals with an insinuating, affected lisp applied to the rather limited subject matter of girls on the stray or on demand. Commercially, I suppose, this is enough for those whose sexual fantasies are serviced by unadorned rock-and-roll. Like many rockers, Gilder tries to straddle youth and maturity; the result is an unconvincing compromise. J.V.

**LOUISE GOFFIN: Kid Blue.**

Louise Goffin (vocals, piano); Lee Sklar (bass); Danny Kortchmar (guitar); David Kemper (drums): other musicians. Kid Blue; All I’ve Got to Do; Hurt by Love; Red Lite Fever; Long Distance; and five others. Asylum 6E-203 $7.98, © 6ET-203 $7.98, © 6EA-203 $7.98, © TC5-203 $7.98.

Performance: L.A. de da Recording: Average

Goffin? Goffin? Could Gerry and Carole have a kid this old? At any rate, Louise Goffin has a

(Continued on page 104)
THE PHASE 8000 IS AS CLOSE TO PERFECT AS YOU CAN GET.

SIGNAL/NOISE: -78dB.
WCW & FLUTTER: 0.013%.
TRACKING ERROR: 0.
SKATING FORCE: 0.

No other turntable can match the Phase 8000, because no other turntable has such advanced motors. You can't buy a quieter turntable. Or one with as low wow & flutter. Or one that tracks better.

The Phase 8000’s tangential tracking tone arm keeps the stylus in perfect 90° tangent with the grooves. It’s the same way the master disc was cut, so the motion of your stylus is identical to the cutterhead stylus. There’s absolutely no tracking distortion. No crosstalk. No skating force that can actually re-cut your grooves.

NEW LINEAR MOTOR ELIMINATES MECHANICAL LINKAGE

Other manufacturers have tried to move tangential tone arms with worm gears. Belts. Rollers. All with the same sad result: Mechanical connections pass on the noise and vibration of the motor.

The Phase 8000 solves this problem with an ingenious Linear Motor. The tone arm base is a permanently magnetized armature that glides along guide bars above electro-magnetic coils. The arm moves by direct induction—not mechanical connection. So there’s virtually no noise.

Inside the tone arm, an opto-electronic detector cell senses the slightest tracking error, and instantly sends correcting signals to keep the arm on track.

NEW QUARTZ-PLL DIRECT DRIVE

Our new slotless, coreless Stable Hitting Rotor DC motor virtually eliminates “platter wobble.” Quick start/stop. Speed deviation is lower than 0.002%.

If you want to hear all these technical advantages translated into musical improvements, contact your Phase Linear audio dealer.
Carole King way with words, which is to say she's semi-inarticulate most of the way through this, and Danny Kortchmar in producing the sound behind her has me just about thoroughly burned out on L.A. rock. I mean it's OD time, friends, and I may not recover in time for the new Karla Bonoff record. Many of these same people have played with some zip behind Linda Ronstadt and James Taylor, so maybe it's the tunes, mostly by Louise, which in truth don't swing much. The one that comes closest to working is Jimmy and the Tough Kids, which is made to seem inarticulate on purpose, with our heroine telling us, "How she just wants to be 'one late on purpose, with our heroine telling us, 'how she just wants to be 'one of the kids.'" As a vocalist, she bears a strong resemblance to Carole, with a thin-line voice she's Carole King way with words, which is to say that has a certain appeal in its cleanliness, but through most of this it's about as excited—and exciting—as a loaf of day-old Wonder bread. N.C.

ISLEY BROTHERS: Winner Takes All. Isley Brothers (vocals and instrumentals). I Wanna Be with You; Liquid Love; Winner Takes All; Life in the City; It's a Disco Night; (Can't You See) What You Do to Me?, and seven others. T-NECK PZ2 36077 two discs $13.98. © ZAX2 36077 $13.98. © ZTX2 36077 $13.98.

Performance: Inspired jive

The Isleys do more with less than any other soul group I can think of; few other performers could stretch into a two-disc set musical contents that could be reasonably presented in no more than ten minutes. They are able to make it work for several reasons. First of all, they have been around since the late Fifties and know all the tricks. Second, this collection of semi-disco riffs has an occasional, unexpected modulation of tempo and genre, which prevents the selections from being monotonous. Finally, there is the unique voice of Ronnie Isley: nobody sings more professionally, almost with an I-do-this-for-a-living attitude, but with such subtleties that even the brothers' concern for sounding commercial cannot stifle his talent. When is somebody going to give that man a medal? J.V.

KANSAS: Monolith. Kansas (vocals and instrumentals). On the Other Side; People of the South Wind; Angels Have Fallen; Stay Out of Trouble, and four others. KIRSHNER FZ 36008 $7.98. © FZA 36008 $7.98. © FZT 36008 $7.98.

Performance: Still an Eagles variant

My experience is that you don’t get much music out of groups named after cities and states. The naming of the group is sort of an original abbreviation of expectancy, and Kansas, like Chicago, continues to take it from there. This new opus is packaged so as to suggest that something interesting could issue. Bruce Wolf’s jacket paintings show American Indians, in space helmets, reasserting control of the land after the white man has blown it. Tepees pitched in the shadow of crumbled freeways, etc., under a quotation from an 1889 Ghost Dance chant: “Soon the earth would be covered with dust and a new earth would be born. All nations of Indians long dead would come back to life. The white man would disappear and the buffalo would return.” If Kansas had written a hit on that theme, the album might have been able to compete with a rerun of The Planet of the Apes, at least, but what they did was write an assortment of mundane, cliché-ridden tunes to various rock conventions (“Well, it’s hard to face the music. But it’s something everybody has got to do.” “You’re in my rock-and-roll/You’re in my very soul.” and so on) and then strike an assortment of pompous attitudes in playing them. Musically, several other groups, notably the Eagles, have mined just about every inch of ground this album covers. Technically, Kansas does everything but write with authority, but a rookie hooker would be more convincing at faking passion and possibly might even have more to say. N.C.

CAROLE KING: Touch the Sky. Carole King (vocals, piano), instrumental accompaniment. Crazy; Eagle; Seeing Red; Move Lightly; Good Mountain People; and five others. CAPITOL SWAK-11953 $7.98. © 8XN-11953 $7.98. © 4XN-11953 $7.98.

Performance: Sincere

Recording: Good

Is there anything more dated than the recent past? Carole King, whose “Tapestry” album was a landmark (watershed, what-have-you) expression of the sensibilities of the late Sixties and early Seventies, now sounds as out of sync with the times as, say, Elliot Gould looks when he’s cast as leading man. Too much (Continued on page 106).
We've just improved every record you own.

Unitized, laminated Permalloy coil core and pole pieces

Individual moving magnets for each channel

Low inductance, low impedance toroidal coil

Non-resonant magnesium-alloy body

Calibrated overhang adjustment

Stylus assembly set screw

Improved radial damping ring

0.3mm diameter Beryllium cantilever

Square-shank, nude-mounted 0.2 x 0.7-mil miniature diamond stylus

Plugs directly into most fine tone arms

Bold, creative new technology sets new standards for clarity, dynamic range, and stereo separation.

Of course the new AT25 doesn't look like other stereo phono cartridges. It's entirely different. And not just on the outside. We've rethought every detail of design and construction. All in the interest of the smoothest, cleanest sound you've ever heard. The AT25 frequency response is utterly uniform. Definition and stereo separation are remarkable. Dynamic range is awesome. Even the most demanding digital and direct-to-disc records are more spectacular, more musically revealing.

But set our claims aside and listen. The AT25 is unexcelled for transparency and clean, effortless transient response. Individual instruments are heard crisply, without stridency even at extremely high levels. Even surface noise is less apparent.

The cutaway view shows you how we do it. Start with the coils. Just two, hand-wound in a toroidal (doughnut) shape. A unique shape which cuts losses, reduces inductance, and lowers impedance. The coils are wound on laminated one-piece cores which also serve as pole pieces. Again, losses are lower. Eddy current effect is also reduced. Which all adds up to superior transient response. It's like having the electrical performance of the finest moving coil designs, but with the high output of a moving magnet. The best of both worlds!

Each magnetic system is completely independent. No common circuits. We even add a mu-metal shield between the coils to insure no leakage between channels. Which results in stereo separation which must be heard to be believed.

But there's more. An entirely new stylus assembly with one of the smallest whole diamond styli in series production. Only 0.09mm in cross section and almost invisible. It's nude-mounted and square-shank to insure exact alignment with the groove. And it's set in a Beryllium cantilever that eliminates flexing.

Instead of snapping into place, this stylus assembly is held rigidly to a precisely machined surface with a small set screw. A small detail which insures perfect alignment, no spurious resonances, and simple stylus replacement.

We treat cartridge shell resonances too, with special damping material applied to the top of the unique plug-in shell. The magnesium shell even has a calibrated adjustment for stylus overhang to insure perfect installation.

The many technical differences between the new AT25 and every other stereo cartridge are fascinating...and significant. But the real difference is in the resulting sound. It's almost as if you had plugged your stereo system directly into the studio console. Every subtlety of artistic expression is intact, no matter how complex—or simple—the music, no matter how loud—or soft—the performance. It's as though a subtle barrier had been removed adding clarity and presence to every record you own.

A cartridge of this sophistication and high quality cannot be produced quickly. Initially the AT25 may be in short supply. But your patience will be rewarded with performance which will send you back through your record library to discover nuances you never suspected to hear. And you'll eagerly await the sonic splendors of tomorrow's digital recording techniques.

This outstanding performance is now available two ways: the direct plug-in AT25 and the standard-mount AT24. Either one will make every other component you own sound better, including your records!

Model AT25 Unitized Headshell/Dual Magnet Stereo Phono Cartridge $375

Model AT24 Dual Magnet Stereo Phono Cartridge $295

audio-technica

INNOVATION ⋄ PRECISION ⋄ INTEGRITY

AUDIO-TECHNICA U.S. INC., Dept. 109F, 33 Shiawassee Avenue, Fairlawn, Ohio 44313

CIRCLE NO. 8 ON READER SERVICE CARD
time has passed for King to personify poetic youth, and yet not enough time has passed for her to bask in the soft focus of nostalgia. It's a sticky place for any composer-performer to be, obviously, and King herself seems quite aware of her current anomalous position. She expresses it here in "Time Gone By": "...her time gone by/When peace and hope and dreams were high/We followed inner visions and touched the sky/Now we who still believe won't let them die..." Brave enough words, but unfortunately I don't hear anything on this country-inflected album, either in composition or in performance, that convinces me that King is doing much more than doodling out there on the sidelines. P.R.


Performance: Better than the material

Recording: Satisfactory

It's almost a shame that L.T.D. sings so well here, for they seem capable of handling material more sophisticated and demanding than the run-of-the-mill stuff on this record. Theirs is quite likely the same problem confronting numerous r&b groups trying to carve out an identity in a field as congested as a rush-hour subway train. That problem is compounded by the limitations currently imposed on this genre: the music must have the prevailing flavor of the day, with stock, uncomplicated changes, and the lyrics must be restricted to such subjects as dancing, love, sex, or the lack of any of these. I'd like to know whatever happened to the humor and commentary on dance and love which is a hallmark characteristic of r&b classics. Even the love songs here seem dishonest, with no uninhibited, gut-level frankness. "Devotion" is no better or worse than most of what is being done by other r&b groups today. We are long overdue for the arrival of a group that does something just a little bit different. Even a smidgin of originality would be welcome. L.T.D., alas, does not offer us even that much. P.G.

CHUCK MANGIONE: Live at the Hollywood Bowl. Chuck Mangione (flugelhorn, electric piano); Chuck Mangione Quartet; orchestra. Feels so Good; I Get Crazy; Love the Feelin'; B'Bye; Main Squeeze; The Xth Commandment; and nine others. A&M SP-6701 two discs $12.98, © 8T-6701 $12.98, © CS-6701 $12.98.

Performance: Excessive

Recording: Excellent

Modestly billed on the cover as "An Evening of Magic," Chuck Mangione's new live album is so big, glittering, and gaudy that it reminds me of one of those "customized" convertibles that some people who can't live without glitz in their lives are having made from production-line hardtops. The wheels, like this album, have a certain tacky-splendid illogic: they are equipped with air-conditioning.

There is glitz to burn in Mangione's florid run-throughs here of such things as Feels So Good, a bloated two-part Children of Sanchez, and the marzipan-stuffed The Xth Commandment. The luxury-option illogic is the addition of a seventy-piece orchestra to accompany the Chuck Mangione Quartet, a ploy that adds absolutely nothing to the music making but does, I suppose, "class it up" to some ears. Mangione's work is now dead-center pop and attractive enough in its own, highly commercial way. His fans will probably be euphoric about this tranced effort, but the only time I think I'd really enjoy it would be while riding along in one of those convertibles. Fat chance. P.R.

MICHAEL NESMITH: Infinite Rider on the Big Dogma. Michael Nesmith (vocals, guitar); Paul Leim (drums); John Hobbs (bass); David MacKay (guitar); other musicians. Dance; Magic; Tomite; Flying; Caricofa; and five others. PACIFIC ARTS PACT-130 $7.98.

Performance: B-plus

Recording: Good

If I thought these songs meant only what they say, I'd tell you not to bother, but Mike Nesmith has something to say. It's a rather bright little album, and between the lines it has something to say. N.C.

HENRY PAUL BAND: Grey Ghost. Henry Paul Band (vocals and instrumental); instrumental accompaniment. So Long; Crossfire; Foolin'; Wood Wind; Grey Ghost; and five others. ATLANTIC SD 19232 $7.98, © TP 19232 $7.98, © CS 19232 $7.98.

Performance: So-so

Recording: Clean

The Henry Paul Band here seems quite crafty at times, with a good feel for blending instruments and voices and for putting space around them; at other times they lapse into self-indulgence and give us an overdose of the rock guitar break, 150 cymbal bashes in a row, and similar threadbare devices. The quality of the songs is spotty, generally tending to grow worse as the album progresses. Early in the album there's intelligent use of the acoustic rhythm guitar, mixed so you can hear it, but later that feeling for texture and contrast seems to erode. So it goes. N.C.

RECORDING OF SPECIAL MERIT

TEDDY PENDERGRASS: Teddy. Teddy Pendergrass (vocals); instrumental accompaniment. Come Go with Me; Turn Off the Lights; All I Need Is You; Do Me; and four others. PHILADELPHIA INTERNATIONAL FZ 36003 $7.98, © FZA 36003 $7.98, © FZT 36003 $7.98.

Performance: Cavemanly

Recording: Very good

I rate this a "Recording of Special Merit" somewhat grudgingly, for I remain unmoved by the Neanderthal sensuality of Teddy Pendergrass. Yet I am willing to concede that there are women—and, indeed, some men—who might fall into rapture at the prospect of making love belabored by barked orders to "Do it like this!" and "Do it like dat!" Talk about machismo! All this dude needs is a club and a loincloth, if some of these songs are to be believed. But he does sing well, with raw virility and an aggressive intensity that commands attention. Interestingly, when he drops the posturing, as in Come Go with Me, I'll Never See Heaven Again, and All I Need Is You, he projects considerable charm. At such times he sounds rather like a short-winded Isaac Hayes, with just a trace of the old Otis Redding shining through. About half the material here is by Gamble and Huff, and it stays true to their formula, but everything is ideally suited to the Pendergrass treatment, with Life Is a Circle especially accentuating the positive in his powerhouse approach. P.G.

POUSSETTE-DART BAND: Never Enough. Pousette-Dart Band (vocals and instrumental). Long Legs; The Loving One; We Never Give Up; Cheated; Cold Outside; Gotta Get Far Away; and four others. CAPITOL ST-11935 $7.98, © 8XT-11935 $7.98, © 4XT-11935 $7.98.

Performance: Okay

Recording: Good

The Pousette-Dart Band tries hard here and has some nice ideas in the arrangements, but the material is ho-hum and the singing doesn't (Continued on page 108)
Ask any disc jockey about direct-drive specifications as accurate as these and he'll tell you how important they are. He'll also tell you how expensive they are. Unless he's heard about Technics D Series turntables.

You'll see our D Series turntables for the same reasons radio stations and discos use our professional turntables: the performance of Technics direct drive. Yet perhaps the best part about all this performance is the prices you can have it for.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>JAW AND FLUTTER (WRMS)</th>
<th>RUMBLE (DB)</th>
<th>PRICE*</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1 Manual</td>
<td>0.03%</td>
<td>-75dB</td>
<td>$125</td>
</tr>
<tr>
<td>D2 Semi-Auto</td>
<td>0.03%</td>
<td>-75dB</td>
<td>$150</td>
</tr>
<tr>
<td>D3 Auto</td>
<td>0.03%</td>
<td>-75dB</td>
<td>$170</td>
</tr>
</tbody>
</table>

*Technics recommended price, but actual retail price will be set by dealers.

And with Technics, the price includes our B FG servo-speed control which constantly monitors and instantaneously corrects turntable speed. So even if the power fluctuates, your Technics direct-drive performance won't. That's an important feature.

So is having all the electronic controls on the front panel. You can turn the power on, change speed, change record size (D3), program Memo-Repeat (D3), even vary the pitch by 10%, all without ever lifting the hinged, detachable dust cover. But when you do, you'll discover Technics' universal S-shaped statically balanced tonearm. It not only has an anti-skate control but oil-damped cueing, too.

And the base? It's made from Technics' unique TNRC base material. So even if you play your music loud, there's little chance of acoustic feedback.

If you thought poor performance was the price you had to pay for an inexpensive turntable, you haven't thought about Technics.

You might find these direct-drive specifications. But not at these prices.
Diana Ross’ newest Motown album, “The Boss,” has turned me on quicker (and better) than anything since Donna Summer recorded her first musical orgasm deep in the heart of Bavaria and changed the record business forever. It’s not that the gorgeous Ross tries to hustle any of Summer’s old tricks in this disco-slanted album. (When you have going for you what Ross has going for her, you don’t need moans and groans; you leave that to the customers.) It’s just that Ross is working the opposite side of the same street, and her impact on it is as sensational as Summer’s is on hers.

Ross has, through a variety of circumstances, acquired and developed such a singular glamour that by now she need only lower her eyelid to be seductive or lend an occasional impatient rasp to her voice to be charming, “I don’t sing very well,” she lazily assured intonation. Her vocal chops, or maybe this is just a throwaway album made to fulfill contract obligations. Either way, it’s nothing to shout “Hallelujah!” about.

J.V.

QUEEN: Live Killers. Queen (vocals and instruments). We Will Rock You; Bicycle Race; Love of My Life; Don’t Stop Me Now; Sheer Heart Attack; We are the Champions; Death on Two Legs; Tie Your Mother Down; and thirteen others. Elektra BB-702 two discs $11.98, © BT8-702 $11.98, © BC5-702 $11.98.

Performance: So-so. Recording: Good.

I’ve admired Queen for their crispness and attack. Though the band can seem technical, even surgical, they have a terrificensemble sound, and their “Fat Bottom Girls” album was a hilarious essay on the gullibility of the rock audience. But live albums, like this one, always make me uneasy. Few bands sound as good in front of the mob as they do in front of the control board. Queen, alas, is no exception. Their discipline falls apart in this two-record set, principally because they are now an established act and can muddle through their hits to enraptured audiences who bellow and moo predictably. It’s all pointless, like a Saturday night at the bowling alley when the guys drink too much warm beer and don’t score with Shirley, the safecutie behind the popcorn machine. Maybe Queen will write a song about that for their next studio album.

J.V.

EDDIE RABBITT: Loveline. Eddie Rabbitt (vocals); David Hood (bass); Roger Hawkins (drums); Larry Byrom (guitar); other musicians. Pour Me Another Tequila; Gone Too Far; One and Only One; Suspicions; So Fine; and five others. Elektra 6E-181 $7.98, © ET8-181 $7.98. Performance: Soiffift. Recording: Very good.

Chances are, listening to this a couple of times will remind you of that toilet-paper commercial in which the wife discovers, after God knows how many years, that softness really is important to her husband. Eddie Rabbitt is a true creation of the late Seventies, when the rewards for being innocuous can be great. The songs here, which he and even Stevens and producer David Mallet mostly wrote, are even more innocuous than on his last album. Lyrics as dead as Peter Frampton!

“I’m glad we got it together . . .” “I’m so glad that I met you baby . . .” “I fall in your arms and it feels so fine . . .” I tell you, friends, listening to this is one of the few experiences that could make me want Larry Canady around as an antidote. Larry Canady, you may recall, is the Eau Gallie, Florida, football coach who, to make his team more ferocious, bites the heads off frogs. N.C.

GER R RAFFERTY: Right Owl. Gerry Rafferty (vocals, guitar, keyboards); vocal and instrumental accompaniment. Days Gone Down; Night Owl; Get It Right Next Time; (Continued on page 110)
JBL’s new L150 takes you deeper into the low frequencies of music without taking you deeper into your budget. This short-tower, floor-standing loudspeaker system produces bass with depth, power and transparency that comes incredibly close to a live performance.

A completely new 12” driver was created for the L150. It has an innovative magnetic assembly, the result of years of research at JBL. It uses a stiff, heavy cone that’s been coated with an exclusive damping formulation for optimum mass and density.

And it has an unusually large 3” voice coil, which aids the L150’s efficiency and its ability to respond to transients (peaks, climaxes and sudden spurts) in music. There’s even more to the L150’s bottom—a 12” passive radiator that looks like a driver but it’s not. We use it to replace a large volume of air and contribute to the production of true, deep bass. Bass without boom.

If you’re impressed with the L150’s lows, you’ll be equally impressed with its highs and mids. Its powerful 1” high frequency dome radiator provides wide dispersion throughout its range. And a 5” midrange transducer handles high volume levels without distorting. The maximum power recommended is 300 watts per channel.

The L150’s other attributes include typical JBL accuracy—the kind that recording professionals rely on. Maximum power/flat frequency response. High efficiency. And extraordinary time/phase accuracy.

Before you believe that you can’t afford a floor system, listen to an L150. While its bottom is tops, its price isn’t.


FIRST WITH THE PROS.

CIRCLE NO. 32 ON READER SERVICE CARD
Here’s a musical memory test you should try on someone else’s copy of this album—don’t spend money for your own unless you pass the test, which is in two parts. Ready? Here we go. Part one: play the album twice; now see if you can remember any of the melodies on it. If you can’t, go on to part two: hum the melody line of Rafferty’s previous hit, Baker Street. No—yep, here’s humming the saxophone riff that everybody remembers; that doesn’t count, you have to hum the melodies.

Did you fail the test? Don’t feel bad; I did too. Really, this is a remarkable album. Even a close, determined listening yields nothing for the brain, heart, or feet. All the songs have much the same tempo, the breathy, thin vocals are all delivered at half power, and the instrumental accompaniment tick-tocks along without accomplishing anything. Even the Baker Street-style sax riffs don’t hook up because there’s nothing to hook on to in these songs. There’s so much air in the material and performances that you could fly a jumbo jet through them. Amazing.

J.V.

LOU RAWLS: Let Me Be Good to You. Lou Rawls (vocals); instrumental accompaniment. Lover’s Holiday; Sweet Tender Nights; Tomorrow; Let Me Be Good to You; and four others. PHILADELPHIA INTERNATIONAL 72 3606 $7.98. © JZT 36006 $7.98.

Performance: Flashing amber Recording: Routine

Lou Rawls, with the lead-fingered assistance of Gamble and Huff (who wrote and produced the three of the eleven songs here), has now been pushed so far into MOR that this album ought to have a blinking amber light on it. But even warning lights don’t prevent all accidents, and there is one major disaster here: a lugubrious performance of Tomorrow from Annie Hathaway, an album that has all the flaccid impact of a Porsche running head-on into a giant squid. Rawls’ voice and (previous) style deserves better than this. A lot better.

RENAISSANCE: Azure d’Or. Renaissance (vocals and instrumentalists). Jekyll and Hyde; The Winter Tree; Only Angels Have Wings; Golden Key; Forever Changing; and five others. SIRE SRK 60687 $7.98. © MBS 60687 $7.98. © MSS 60687 $7.98.

Performance: Pretentious recording Recording: Excellent

Renaissance is an onward-and-upward group of four instrumentalists plus lead vocalist Annie Haslam. They started out a few years ago rather strong in the melody department, often building their music on classical compositions and going in for ambitious—indeed, pretentious—projects such as their interminable LP Scheherazade and Other Stories, not to mention songs with tunes borrowed from the works of Debussy, Prokofiev, and Rachmaninoff. Lately, Renaissance has been turning more to a rock sound and trying to make all their music on their own rather than teaming up with orchestras. This change in approach has not rendered them any less pretentious.
NOBODY CAN MATCH OUR PERFORMANCE
BECAUSE NOBODY CAN MATCH OUR TECHNOLOGY.

Kenwood has consistently made the significant technical advancements that make a difference you can hear. Like the first introduction of DC into integrated amplifiers.

And now, Kenwood does it again. Our exclusive Hi-Speed amplifier has actually changed the standards by which high fidelity is measured. It reacts much faster to changes in the music, particularly in the mid to upper frequencies. So all the subtleties of the music come through—even an individual singer in a backup vocal group.

In our tuner's, we've developed Pulse-Count Detector circuitry to digitally reduce FM distortion by half while significantly reducing background noise. You'll hear the difference in your FM reception as a more distinct, clearer sound. And only Kenwood has it.

In fact, every Kenwood component has exclusive features that improve sound quality. Like turntables with resin-concrete bases that virtually eliminate unwanted vibrations, and an extra-heavy, high inertia platter that keeps the record speed constant. And our dual-belt cassette decks that use a unique, extra-heavy flywheel for constant tape speed and better reliability.

Your Kenwood dealer can demonstrate how these features actually improve the tonal quality of your music.

And that's what great performance is all about.

KENWOOD®

For the Kenwood dealer nearest you, see your Yellow Pages, or write Kenwood, P.O. Box 6213, Carson, CA 90749.
In Canada: Magnasonic Canada, Ltd.
tious, however, and they continue to deal with rather lofty subjects—among them, in this album, the city of Lyons in the midst of a flood at a mythical "island" called Kalynda, a fantasy about a "secret mission," and the dual spirit of a Jekyll-and-Hyde type. The lyricist, Betty Thatcher, is particularly proud of the "diverse and upbeat" stanzas she has contributed to these songs, but Haslam, alas, although she boasts a terrific range, has a tendency to mouth the words in a mumbly manner that makes them all but in comprehensible. I wonder if they know what azare d'or means or if that's there for the sound of it too. P.K.

SMOKEY ROBINSON: Where There's Smoke. Smokey Robinson (vocals); vocal and instrumental accompaniment. It's a Good Night; I Love the Nearness of You; The Hurt on You; Crissin'; and four others. TAMLA T-366 R1 $7.98, © T-366 H $7.98, © T75-366 H $7.98.

Performance: Charmingly uncluttered Recording: Good

Perhaps I was spoiled by "Smookin'" (Tamla T9-363 A2), Smokey Robinson's last live album. It was a treasure trove of all the aged-in-soul songs that made him the dean of rhythm-and-blues writers back in the early Sixties when Motown was synonymous with the vibrant sound of an emerging urban generation. It would be difficult even for Smokey to produce another gem comparable to Ooh, Baby, but if he could, it isn't on this disc. Of course, these songs are new and haven't had a chance to imbed themselves in our minds to the point where the lyrics seem like old friends, but in their freshness and consistent quality they are nevertheless a pleasure to hear.

The range of the material is relatively broad, from It's a Good Night, an interesting disco play on the basic melody of the standard It's a Good Day, to Share It, which is almost old-fashioned in its directness and simplicity. Indeed, one of the elements of Robinson's staying power is the eloquent leanness of his music. Where others employ electronic gimmicks and endless over dubbing, he relies steadfastly on the music to convey its own message as he sings in a high, clear tenor that is satin in its sheen. Emphasis in the instrumental back-up is on rhythm and guitar, with only occasional tasteful intrusions by strings and other voices. The disco flavor of several tracks is adroitly underplayed as he bends the mold to suit his style, such as on a subtly rocking item called Get Ready. My favorite here is Crissin', which is enhanced by a graceful, laid-back Caribbean rhythm. Maybe this isn't a landmark album in Robinson's long and fertile career, but it is solid, ingratiating music that should wear well.

P.G.

RECORDING OF SPECIAL MERIT

MEL TORMÉ: Easy to Remember. Mel Tormé (vocals); instrumental accompaniment. They Didn't Believe Me; September Song; County Fair; Blues in the Night; April Showers; From Me; and six others. GLENDALE G 6018 $7.98 (from Glendale Records, P.O. Box 1941, Glendale, Calif. 91209).

Performance: Excellent Recording: Surprisingly good

This collection of twelve tracks apparently from the late Forties (no dates are given) offers Mel Tormé singing standards in a voice whose style and mannerisms are beautifully timeless. Tormé doesn't sound mannered at all to today's ear, and his styliness only seems to add luster to his reputation. He accomplishes an almost flawless performance of Rodgers and Hart's It's Easy to Remember and sings a darkly textured and moody Blues in the Night and an oddly mocking Love Me or Leave Me with all the ease and solid musicianship that have been his hallmarks. As a bonus, there's his own classic County Fair, and what a delight it is to hear it again after all these years. The sound is surprisingly good, ample and full bodied without that ghostly performed-in-a-vacuum deadness that mars so many restorations. A really satisfying album.

P.R.

DENICE WILLIAMS: When Love Comes Calling. Deniece Williams (vocals); instrumental accompaniment. When Love Comes Calling: Why Can't We Fall in Love; God Knows; Like Magic; I Found Love; and five others. ARC/COLUMBIA JC 35568 $7.98, © JCA 35568 $7.98, © JCT 35568 $7.98.

Performance: Not her best Recording: Very good

For this third solo set, and following her excellent duet album with Johnny Mathis last year, Deniece Williams did not work with producer Maurice White, though she is appearing on his new label. Instead, she co-produced the album herself with David Foster and Ray Parker Jr., the latter the leader of Raydio. A difference in quality is immediately apparent. Although Williams wrote most of the songs, as she did on her previous albums, somehow they don't seem to come across as well. Furthermore, the order is awry. The most humdrum and predictable numbers are used as openers, including the inevitable, overly long disco track, now a requirement on all pop albums except those by the Mormon Tabernacle Choir. Not until the last track on the first side does anything highlight Williams's sense of musical style or her distinctively high, babydoll voice. This is Touch Me, a ballad that gets off to a string-laden melodramatic start and settles down into a lush romantic groove. It is moving in its unrestrained sentimentality, and the album takes a sharp upward turn thereafter. The title track, When Love Comes Calling, Like Magic, and Turn Around are all solid up-tempo swingers, and Old Flame, New Fire; Always Loving You; What Does It Make! (I Found Love) are not entirely successful. The opening side is divided by Williams's performance of the.title track, a harrowing love ballad. The last side contains the predictable "diverse and upbeat" stanzas she has contributed to these songs, but Haslam, alas, although she boasts a terrific range, has a tendency to mouth the words in a mumbly manner that makes them all but in comprehensible. I wonder if they know what azare d'or means or if that's there for the sound of it too. P.K.

HANK WILLIAMS JR.: Family Tradition. Hank Williams Jr. (vocals, guitar); Allen Lindgreen (keyboards); Chet McCracken (drums); Ray Pohlman (bass); Reggie Young (bass) and the other musicians. To Love Somebody; Old Flame, New Fire; Always Loving You; We Can Work It All Out; Paying on Time; and five others. ELEKTRA EF-194 $7.98, © ETB-194 $7.98, © TCS-194 $7.98.

Performance: Good; songs uneven Recording: Better than average

I guess the trouble is not so much with this album as with my expectations: I'm a believer in the long-term importance of Hank Junior, and this thing is unfocused, scattered, all-over-the-place—good, bad, and indifferent. Within that context, the narrower problem is, as he says in the last ditty, "I just ain't been able to write no song. " Not literally so, as he wrote five of these, but figuratively so, as four of them are rehashes of ideas he's explored better before (including the title song, which says, again, "I got to go my own way") and the fifth, I've Got Rights, is a rather mean-spirited ode to violence reminiscent of that Charles Bronson movie Death Wish. It's some sort of exercise in cathartic allegory, I suppose. Elsewhere, Williams tries too hard to out sing the overexposed, chestnut nature of Only Daddy That'll Walk the Line, and of course there's no excuse for any new recording of I Fought the Law. And the Steve Young tune, Always Loving You, would be all right if it didn't steal much of its melody from the earlier Steve Young tune, Seven Bridges Road. What does work is Williams's man-sized version of To Love Somebody, which Barry Gibb (!) wrote years ago for Otis Redding. Most of the vocals, for that matter, are robust and forceful, but there's the occasional blip in the instrumentals . . . which still, unfortunately, doesn't overcome the grab-bag, hit-or-miss nature of the programming.

N.C.

TAMMY WYNETTE: Just Tammy. Tammy Wynette (vocals); instrumental and vocal accompaniment. They Call It Making Love: We'll Talk About It Later; Somewhere; Mama, Your Little Girl Fell; I'm Not Ready Yet; and five others. EPIC KE 36013 $7.98, © KEA 36013 $7.98, © KET 36013 $7.98.

Performance: Just average Recording: Good

No such problem here, no truly fetching songs and no unspeakably bad ones, nothing very gross or very inspired in the backing. It would do nicely as one's very first Tammy Wynette album, as it displays what she does—phrasing fighting its way around a sob, surprising range, and so forth—and is neither the best nor the worst example of how Billy Sherrill produces her. He loads it up with too much instrumentation only a few times and in general makes it only about twice as slick as it needs to be—about average. In other words, But Tammy is one of the few female stylists of any kind of music, and this is a fairly representative sampling of how she does it. N.C.

(Continued on page 116)

Real's new golden leaf tobacco blend does it. Tastes richer...mellower...more satisfying. A taste that's pure gold.
I’ve always believed her, if not always in the causes she’s chosen to become involved in. But her commitment to what she believes in has always seemed to me to be deeper, more genuine, and less self-serving than Dylan’s, and simply light years away from the sophomoric, pseudo-intellectual melodramatics of such Hollywood/London townhouse-bred revolutionaries as Jane Fonda and Vanessa Redgrave. Joan Baez is for real, and she comes across that way no matter what the direction her life or her feelings have taken her.

Her latest album on the Portrait label, “Honest Lullaby,” is just as real. In some ways, to be sure, dismayingly so: her voice is now a rough, often growing alto, as topless as Carol Doda’s act. She is a couple of years beyond the perfect thirty-six, and she sounds it—in all the best ways: mature, experienced, secure, and (most of all) wise. Even though the waterfall-pure soprano has clouded and the impetuous, dramatic earnestness has mellowed into a calm sincerity, it is the sense of wisdom that permeates Baez’s new work that is so striking. She’s lived a lot and she’s learned a lot. Simply to hear her move confidently through the old J. Fred Coots/Sam Lewis classic For All We Know is to be assured that this is no burnt-out Sixties “girl” retreating to a standard so she can’t be judged against her previous work, but instead an adult calmly talking about change, possibility, and some of the immutable facts of life as she’s experienced them. And she tells us reassuringly that it’s all okay, just that way, with the grace note of utterbelievability that’s always lightened her work, whatever the subject. It is that very believability, I think, that will form the basis for the second half of her career; she has become someone people identify with and from whom they can derive a certain comfort.

One measure of the power of her conviction and of her plain speaking is a conversation I had recently with a beautiful woman who had just passed her thirty-first birthday (an occasion, in our jiggly, media-drenched society, that can probably be likened only to being forced out onto that storm-swept exit from Shangri-La where a belle turns into a bel Dame within hours). Strong-minded and independent though she is, the lady in question had been feeling decidedly gloomy. But that was before she saw Joan Baez on the Johnny Carson show, plugging this very “Honest Lullaby” album and discussing why she refused to have the album’s cover photo retouched. “I earned those lines,” was the gist of her argument, and the implication was that she liked what she had earned. Since Baez never looked better or more appealing, the lady took it as an opportunity to rethink the matter more constructively, and she decided that change and growth aren’t so bad after all, even though many of her contemporaries determinedly choose to remain adolescent going on infantile. In other words, she believed Baez.

Baez says it best in the title song: “I look around and wonder/How the years and I survived.” The answer: “I had a mother who sang to me/An honest lullaby.” The song is one of the best things she’s done in years and certainly the most mature. The first three verses are about her own growing up in the Fifties, when things were in many ways just as tacky as they are right now (although I can’t imagine one of the Debbie Reynoldsish pop stars of that era ever refusing any retouching on her album covers). It has about it much of the poignancy and haunting regret of Janis Ian’s At Seventeen—with the difference that Baez restricts the commentary and the judgments pretty much to herself and even admits “I taught myself to sing and play/And use a little trickery/On the kids who never favored me . . .” In other words, she knew she had talent, and she knew the social uses of it. Honest indeed. The last verse is about her son Sasha, now eight, and what she hopes will be their relationship in the Eighties: “And while the others play with you/I hope to find a way with you/And sometimes spend a day with you/I’ll catch you as you fly/Or if I’m worth a mother’s salt/I’ll wave as you go by . . .” Another honest lullaby.

Yes, Trendsies please note, it is a song about (omigawd!) Mother Love. It takes a certain kind of guts, after three-quarters of a century of variations on the “Mummie Let Me Down” and/or “Mommie Was a Bitch” theme in the arts, not only to praise one’s own mother but to admit to believing a loving mother oneself.

I hope I’m not giving you the idea that Ms. Baez has just nominated herself as Chief Usherette into a new age of Sweetness and Light. Not at all. She delivers the aching lines of Janis Ian’s Light a Light with all the hard-edged, weathy, dispossessed candor that’s written into it, and she sizzles through No Woman, No Cry by Vincent Ford with the kind of urgency and suppressed anger that first established her reputation in the Sixties. And Pierce Pettis’ The Song at the End of the Movie provides Baez with the sort of material she’s always done easily and enormously effectively—the sad, sweet, punchy ballad. All in all, quite an album and quite an achievement for Joan Baez. She offers happy proof in “Honest Lullaby” that no matter how often you change your mind or your life, you can sail through it all as long as you have something you really believe in. What? Well, that’s up to you. Baez has found her answers, and her generous sharing of them is going to make a lot of people feel a lot better. I’d say that she is the first of the major pop figures of the Sixties to take a well-deserved seat among the immortals.

—Peter Reilly

JOAN BAEZ: Honest Lullaby. Joan Baez (vocals, guitar); instrumental accompaniment. Let Your Love Flow; No Woman, No Cry; Light a Light; The Song at the End of the Movie; Before the Deluge; Honest Lullaby; Michael; For Sasha; For All We Know; Free at Last. PORTRAIT JR 35766 $7.98. © JRT 35766 $7.98.
Feedback Causes:

Feedback Cure:

DISCWASHER®

Hi-Technology Turntable Isolation System

• Works in combination with existing feet for dramatic reduction of feedback.
• Isolates better than original or "replacement" feet.

Home environments can "upset" a turntable by feeding back both speaker and footfall vibrations. Acoustic isolation of a turntable involves the complex variables of turntable weight, room/floor conditions and audio system placement. The Discwasher DiscFoot has been specifically designed to successfully isolate most turntables in the home environment.

The "Material" Solution

The major components of the Discwasher DiscFoot System are new, "totally engineered" chemical complexes that behave radically different than other plastic, rubber or spring systems. These proprietary compounds are durable and precise in behavior, although difficult and expensive to synthesize. Laboratory and real-world tests justify the use of these unusual materials in the DiscFoot System.

The Telling Test

The oscilloscope photo shows the output of two identical audio systems on the same shelf with their styli contacting the platters. The shelf is being struck by a rubber mallet. The top trace shows a turntable with absorptive "replacement" feet. The lower trace shows a DiscFoot System operating in conjunction with the existing turntable feet. Note the dramatic (tenfold) improvement in shock and feedback isolation.

The DiscFoot System contains four isolation feet, four platform caps, four furniture-protecting sheets and four special damping pads (to adapt DiscFoot units to certain turntables.) Additional single DiscFoot units are available for turntables weighing over 22 lbs. The system costs $22.

Discwasher DiscFoot can be found at audio dealers interested in preserving your music.

discwasher, inc.
1407 N. Providence Rd.
Columbia, Missouri 65201

CIRCLE NO. 22 ON READER SERVICE CARD
Call TOLL FREE 800-638-0935 MON.-FRI. 9-8, SAT. 9-4
Orders shipped within 48 hrs. • Phone and COD orders accepted • Use Visa, Master Charge, or NAC • Call or write for quotes • Catalog available upon request • All equipment factory sealed with full warranty.
Hi-Fi Buys
1362 HOLTON LANE
LANGLEY PARK, MD. 20783
(301) 434-5330

CIRCLE NO. 28 ON READER SERVICE CARD

BIGGEST SAVINGS—SAME DAY DELIVERY
CALL 301-488-9600

- We have more of the components and manufacturers you are looking for.
- Our prices are the lowest you'll find anywhere.
- Your phone order is shipped the same day you call.
- In most cases you'll enjoy your equipment within 72 hours.
- We stand behind everything we sell with a "No Lemon" guarantee and a trained customer service department.
- Our Audio Advisors will help you select the right equipment at the best prices for the quality you demand.

Call (301) 488-9600 for information on equipment, prices and ordering, or send for free brochure, tips on buying hi-fi equipment by mail, test reports and a $2.00 merchandise certificate.

International Hi-Fi Distributors
Moravia Center
Industrial Park, Dept. 2GSR
Baltimore, Maryland 21206

CIRCLE NO. 30 ON READER SERVICE CARD

Hi-Fi Buys

ON TECHNICS JENSEN
AND OTHER FAMOUS BRANDS

DUAL CS1246 STEREO CASSETTE TAPE DECK

Hi-Fi Buys

PIONEER
dual CS1246

Hi-Fi Buys

Call TOLL FREE 800-638-0935 MON.-FRI. 9-8, SAT. 9-4
Orders shipped within 48 hrs. • Phone and COD orders accepted • Use Visa, Master Charge, or NAC • Call or write for quotes • Catalog available upon request • All equipment factory sealed with full warranty.
Hi-Fi Buys
1362 HOLTON LANE
LANGLEY PARK, MD. 20783
(301) 434-5330

CIRCLE NO. 28 ON READER SERVICE CARD

BIGGEST SAVINGS—SAME DAY DELIVERY
CALL 301-488-9600

- We have more of the components and manufacturers you are looking for.
- Our prices are the lowest you'll find anywhere.
- Your phone order is shipped the same day you call.
- In most cases you'll enjoy your equipment within 72 hours.
- We stand behind everything we sell with a "No Lemon" guarantee and a trained customer service department.
- Our Audio Advisors will help you select the right equipment at the best prices for the quality you demand.

Call (301) 488-9600 for information on equipment, prices and ordering, or send for free brochure, tips on buying hi-fi equipment by mail, test reports and a $2.00 merchandise certificate.

International Hi-Fi Distributors
Moravia Center
Industrial Park, Dept. 2GSR
Baltimore, Maryland 21206

CIRCLE NO. 30 ON READER SERVICE CARD

Hi-Fi Buys

ON TECHNICS JENSEN
AND OTHER FAMOUS BRANDS

DUAL CS1246 STEREO CASSETTE TAPE DECK

Hi-Fi Buys
The only half-speed deck anywhere.
And that's only half the story.

The new Nakamichi 680 2-Speed Discrete Head Cassette Deck is a success story from the moment you turn it on and enjoy the unique convenience of three hours of recording and playback from a C-90 cassette. The sound you'll hear at half speed rivals many decks at normal speed. To deliver superb sound as the tape glides by at 15/8 inches per second meant that Nakamichi had to outdo itself at 1 3/16 ips. So when you want the optimum, twist the knob back to 1 3/8 ips and you'll hear unheard of fidelity. It's no wonder that Nakamichi is the company to bring you this remarkable cassette deck. The essential component of everything we do—from the smallest detail to the most impressive technological breakthrough—is a constant commitment to excellence in the fine art of recorded sound. For the full story on the new 680 write to Nakamichi U.S.A. Corp., 1101 Colorado Avenue, Santa Monica, California 90401.
and is about as interesting. Her sound and performances are Precise, Rigid, and, above all, Accurate. Her seven-minute time-and-motion study of Make Love to Me (an otherwise engaging, empty-headed piece of fluff) is about as feverish and abandoned as John Travolta's agent closing a deal. Let Me Be Your Woman has the properly improper lustiness and is about as interesting. Her sound and instrumental accompaniment. Motherhood; Yes: Come and Stay All Night; Dance Right Now; Gimme Gimme Your Lovin'; and four others: NBLP 7151 $7.98, © NBL5-7151 $7.98, © NBL5-7151 $7.98.

Performance: Joyous
Recording: Super

Considering the people behind this record, the happy result comes as no surprise. Giorgio Moroder was co-producer, and you know—than Juergen Koppers, the Munich Master himself, was mixing engineer. The Sylvers' contribution is a mellow, close harmony as easy on the ear as the arrangements are on the feet. The songs are all rather joyous. Is Everybody Happy bounces along smartly, Hoochie Coochie Dancin' could easily get you out of a mild sweat, and I Feel So Good Tonight certainly communicates the right spirit for fun dancing. Moreover, each side of the disc is an unbroken party sequence. This is altogether a most delightful record—happy, youthful, and beautifully engineered.

P.R.

TASTE OF HONEY: Another Taste (see Best of the Month, page 94)

RECORDING OF SPECIAL MERIT

MIKE THEODORE ORCHESTRA: High on Mad Mountain. Mike Theodore Orchestra (vocals and instrumentals). High on Mad Mountain; Wonder Man; and two others. Westbound WT 6109 $7.98, © TP 6109 $7.98, © CS 6109 $7.98.

Performance: Hot and heavy
Recording: Good as they come

For those who like their disco hot and heavy, this album is a must. The title song is over eight minutes of powerful salsa disco, excellently programmed to introduce new textures and counter-rhythms through its entire length. For a wonderful trip, listen for soaring lines beginning 'Come with me baby to the sun.' But come back in time for the final reprise of the main theme. Wow!

The whole album is in the same mode. Disco People comes closest to High on Mad Mountain in impact—again, because Theodore knows that disco people need variety for stimulation. His easily electronic throbs give way to romantic strings, double-tempo chords intervene, sexy voices enter on top, rock-hard guitar riffs introduce a fresh direction, and so on. Theodore clearly loves working with lots of music and knows just what to do with it. Never mind that some critics will complain of overarrangement or call this music "manipulative." The many, many pieces of these extravaganzas fit together perfectly, and when you're out there dancing, you wait for stuff like this to take you away.

E.B.

NANCY WILSON: Life, Love and Harmony. Nancy Wilson (vocals); vocal and instrumental accompaniment. You're the One; Heaven; Here's to Us; Sunshine; This Is Our Song; and four others. Capitol ST-11943 $7.98, © 8XT-11943 $7.98, © 4XT-11943 $7.98.

Performance: She survives
Recording: Homogenized

Nancy Wilson's last few albums have been uncommonly strong stuff, gutsy expeditions into territory she'd always been considered too commercial or too sexy for. They were artistic successes on every count for this pop singer turned singing actress, but they didn't do much at the cash register. So, inevitably, we are now presented with Disco Nancy, and what a bummer that is—almost. "Almost," because Wilson emerges from the arrangements often enough, and strongly enough (particularly in the title song, Sunshine, and a nice ballad called This Is Our Song), to convince even a casual listener that she'll survive this and any other fads that the music biz is likely to force on her in the future. The arranging, production, and conducting are all by Larry Farrow (he and Carolyn Jones wrote the songs). Farrow has a frozen, one-note approach to everything, but Nancy Wilson manages to survive that too.

P.R.

RECOMMENDED DISCO HITS

- CAROLINE CRAWFORD: Nice and Soulful. Mercury SRM-1-3792 $7.98, © MC8-1-3792 $7.98, © MCR4-1-3792 $7.98.
- DESTINATION: From the Beginning. MCA/Butterfly FLY-3103 $7.98.
- SWAMP DOG: Come and Dance with Me. Atomic Art 334-A disco disc $3.98.

(List compiled by John Harrison.)

THEATER・FILMS

RICHARD RODNEY BENNETT: A Different Side of Sondheim. Richard Rodney Bennett (vocals, piano); Milt Hinton (bass). Bobby Rosengarden (percussion). I Do Like You; Take Me to the World; You Must Meet My Wife; Anyone Can Whistle; So Many People; and five others. DRG SL-5182 $7.98.

Performance: Not different enough
Recording: Very good

After hearing this record, I'm still not sure what's "different" about this side of Sondheim from the side we already know, and I'm not at all convinced that, as Rex Reed says in the liner notes, "Stephen Sondheim and Richard Rodney Bennett are at the height of their creative form." Such songs as You Must Meet My Wife and the Night Waltz from A Little Night Music retain their original, undeniable charm as Bennett (who is also a serious composer of serious music) interprets them. But I can imagine more persuasive vocalizing than he contributed to I Do Like You from A Funny Thing Happened on the Way to the Forum or the surprisingly touching lines in I Remember from a TV special about department-store dummies who come to life after closing time. Bennett's pianism is fleet and cool and matches the moods of the clean-cut Sondheim ballads, including several from Anyone Can Whistle, to which it is applied, but it also at times comes dangerously close to the style of the corner cocktail lounge.

P.K.

MANHATTAN (George Gershwin). Music from the film with selections from the original soundtrack. Rhapsody in Blue. Gary Graft (piano); New York Philharmonic. Zubin Mehta cond. Land of the Gay Caballero/Someone to Watch over Me; Mine; I've Got a Crush on You/Do, Do. Oh, Lady Be Good/'S Wonderful; and three others. Dick Hyman (piano); Milt Hinton (bass); Eric Cohen (drums); other musicians. Columbia JS 36020 $8.98.

Performance: Opulent
Recording: The works

No matter how you feel about Woody Allen's films, you have to give the man credit for being one of the few American directors still making personal films—and making them pay off—at a time when the industry seems headed back toward big-budget "entertainment" films in which the producer is often the real star. This album is a gaudily pleasant memento of Allen's dark-grey comedy of (no) manners about a bunch of hip, daytime Draculas who go about the nasty business of draining one another's vital spirits under the guise of being "real." Recording producer Andy Kazdin has shot the works sonically. For Rhapsody in Blue Zubin Mehta conducts the New York Philharmonic in his best overrich, opu-
(Continued on page 120)
By now, most audiophiles understand the importance of phase accuracy. During a live performance all the notes—or frequencies—produced by the musicians have specific phase (time) relationships to each other. And the many overtones—harmonics—within each note also have specific orders in time and strength. If these subtle musical phase relationships are confused or lost, so is true fidelity.

Loudspeakers, because they operate simultaneously in the separate worlds of electronics, mechanics and acoustics, have the worst problem with phase accuracy. And the most difficult to correct. In the attempt to correct for phase aberrations, speaker manufacturers have produced an odd assortment of peculiarly shaped enclosures and driver configurations. But these half-measures create as many problems as they solve.

Only Onkyo provides a total solution to the phase problem. The Onkyo Model F-5000 Phase Aligned Array™ is a three-way system whose individual drivers are inherently phase accurate because of their radically different—and technologically superior—construction.

The three planar (flat-diaphragm) drivers in the Model F-5000 were developed through laser interferometry and computer analysis of the phase-randomizing break-up modes in conventional driver cones. Onkyo’s solutions for the F-5000 are embodied in the diaphragms of the 12" bass and 4" mid range drivers. They consist of essentially flat annularly ribbed polyurethane/felted paper patented laminations that are inert, stiff, and yet have exceptionally low mass.

The critical high-frequency reproducer (DDM — Direct Drive Membrane™) in the F-5000 employs an extremely thin and light polyamide membrane. The result is electrostatic-like clarity, definition and center imagery, without the typical electrostatic drive problems.

The computer-developed crossover network, designed for the required phase characteristics, employs only air-core inductors and Mylar® capacitors. Onkyo’s efforts and quality construction have resulted in smooth, wide frequency response, flat amplitude and precise linearity. Thus, the sound waves that come out of the system are almost mirror images of the sound waves that go into them.

The overall effect is one of clarity and transparency delivered from a unit that looks as good as it sounds.
Record sales are way off and the heat is consequently on in the executive suites, so a lot of commercial hopes are riding on such major new releases as Carly Simon's "Spy" from Elektra. Carly is just fine—never better, in fact—and if quality still sells, the record will do well. Even in such flaky times as these, real talent like Carly Simon's will flourish.

The title of "Spy" comes from Anaïs Nin, who called herself "an international spy in the house of love," and Carly's songs on it show her at her tough-minded best, asking no quarter and offering none. Like her literary counterparts Mary McCarthy and Joan Didion, Carly Simon sees and allows herself to feel a great deal more than the average privileged, upper-middle-class young woman—probably much more than she'd like to. In We're So Close she offers a clear-eyed description of one of those strangely bloodless relationships so many people cling to these days: "He says: / We're so close we can dispense with love/We don't need love at all." Those who called herself "an international spy in the house of love," and Carly watches "... safe and clean/From the frosted windows of the limousine."

But it's not all social realism. "Spy" includes plenty of simple entertainment, such as Pure Sin, about a girl posing chastely for her portrait while planning something a great bit livelier for later, the unsticky but romantic Love You by Heart, and the very funny and touching Coming to Get You, about a country mother talking on the phone with her runaway child. Arif Mardin's production is faultless, and on several tracks James Taylor turns up to sing background for the Mrs.

I don't know, and really couldn't care less, whether "Spy" will pull any fat out of the fire for the sweating execs at Elektra. What I do know is that it is one of the best albums of the year and that Carly Simon is carving out a unique place for herself in American pop as a sort of Sister Courage. No, not "Mother"; we still don't want anyone who knows us that well, do we?

—Peter Reilly

CARLY SIMON: Spy. Carly Simon (vocals); vocal and instrumental accompaniment. Pure Sin; Love You by Heart; Spy; Memorial Day; We're So Close; Vengeance; Just Like You Do; Coming to Get You; Never Been Gone. Elektra 5E-506 $7.98, © 5T5-506 $7.98, © 5C5-506 $7.98.

lent, condensed-milk style, and Gary Graff- man plays as if his home and career depended on it. The usually amiable laid-back Dick Hy- man is goosed through his passages in many of the Gershwin songs as if Liszt were sharing the piano bench with him and breathing down his neck. Overall, sound takes first place here. Mehta comes in second, and Gershwin is third. Still, it recalled the really joyous lift I got from the superb opening sequence of the film, in which Allen and his cameraman, Gor- don Willis, so masterfully matched images of Manhattan with the sounds of Gershwin. Lat- er, when the narcissists started to write through their manipulative games playing, the background music could have been Hin- demith for all I cared. In fact, I still think vari- ations on Is That All There Is? would have been more appropriate for Allen's grin, solips- sistic tale than the buoyant, life-celebrating work of George Gershwin. P.R.

COLLECTION


Performance: Hilarious hodgepodge
Recording: Fair

Back in 1956, some of the greatest names in British and American show business got together at the London Palladium in a benefit performance for an organization aiding under- privileged children. Peter Ustinov, Laurence Harvey, and Paul Scofield brought down the house when they appeared in drag to do Noel Coward's Three Theatrical Dames. Next, Jack Benny engaged in a violin duel with a precocious young lady named Yvonne Lar- vin, and Laurence Olivier joined his wife, Vi- lian Leigh, and John Mills in their own weirdly funny version of Top Hat. White Tie and Tails. Then eight English actresses sang Chi- cago. Tyrone Power led a corps of undercard chorus girls singing Chattanooga Choo Choo, and Bob Hope did a monologue. The program ended with a "sign- off" by Olivier (not yet Sir Laurence).

To round out the disc, DRG has supplied, evidently from other recorded sources at its disposal, Noel Coward singing Let's Do It with some unusual interpolations, such as "T. S. Eliot and Fry do it/They do it in verse/ Priestley and I do it/But we have to rehearse" and "McCarthy once did it/But it took a long time." They have also added two more Cow- ard songs supremely interpreted by Beatrice Lillie (this is the only available recording of her version of Thank You So Much, Missus Lowsborough-Goody), an intriguing, husky treatment of What Do I Care? by Tallullah Bankhead, and, from the soundtrack of the movie Everything Is Rhythm, Mabel Mercer being devastating in Black Minnie's Got the Blues. Then there's Maurice Chevalier singing (what else?) Louise, Gracie Fields doing Sally, and a finale in which Fields is joined by the Coldstream Guards Band—all these from a Royal Variety performance in 1952. The whole thing doesn't really add up to a pro- gram, but there are marvelous moments. P.R.
We found the optimum pivot point before the others even knew it was missing.

Most manufacturers are content to determine tonearm pivot points by trial-and-error. And many tonearms are so susceptible to external vibrations that you have to tiptoe around the turntable.

With Sansui's Dyna-Optimum Balanced (DOB) tonearms, based on our Optimum Pivot Point principle, the transmission of vibrations is dramatically reduced to give you more freedom to enjoy your music. It's used in our new, fully automatic direct-drive FR-D4 and FR-Q5.

Here's how the DOB works: Put a pencil on a table. Wiggle one end back-and-forth. The other end will move; but a certain point will not. This is the Optimum Pivot Point.

In our new DOB tonearm the arm is pivoted at this highly stable point. With no relative motion between the point and the arm support, effects from external forces are minimized. Friction is almost non-existent, so the stylus is free to trace every part of the groove. We also added a special decoupling device and a unique counterweight for optimum tracking.

A patent is pending on Sansui's brushless DC motor used in the FR-D4 and FR-Q5. And with the Quartz-PLL system of the FR-Q5 and the special speed-error detection/correction system of the FR-D4, wow and flutter, speed accuracy and signal-to-noise specifications are outstanding. All operations are computer-controlled using the latest LSIC technology. The computer even knows to shut off the motor if you forget to unlock the tonearm clip.

To make the FR-D4, FR-Q5, as well as the budget-priced direct-drive FR-D3 even more convenient, we put all the controls up-front, outside the dustcover.

Ask an authorized Sansui dealer to demonstrate our new turntables. Listen closely and you'll hear what the others are missing.

SANSUI ELECTRONICS CORP.
Lyndhurst, New Jersey 07071  Gardena, Ca. 90247
Sansui Electric Co., Ltd., Tokyo, Japan
Sansui Audio Europe S.A., Antwerp, Belgium
In Canada, Electronic Distributors Ltd.
Take it...Easy

Simply focus and shoot with a Yashica FR Series camera. It's that easy.
These quality, compact SLR's are totally electronic making 35mm photography fun and foolproof.
And the Yashica FR, FR-I and FR-II are so affordable you can begin building a complete system with Yashica and Zeiss lenses, plus more than 200 accessories.

Free and easy.
Buy a new Yashica FR Series camera and get a Free "35mm World" photography course! Ask your camera dealer for details.

YASHICA

Yashica, Inc., 411 Serte Dr., Paramus, N.J. 07652

FR is a licensed trademark of Cine Magnetics, Inc.

CIRCLE NO. 75 ON READER SERVICE CARD

THE ORIGINAL CARTER FAMILY. Maybelle Carter (vocals, guitar); Sara Carter (vocals, autoharp); A. P. Carter (vocals). Keep on the Sunny Side; Engine One Forty-Three; Diamonds in the Rough; Single Girl, Married Girl; The Homestead on the Farm; Wildwood Flower; and five others. RCA CP1-2763 $8.98. © CPS1-2763 $8.98. © CPK1-2763 $8.98.

Performance: Legendary
Recording: Variable

The Carter Family started recording in 1927, the year of Lindbergh, of Babe Ruth's greatest hits, and within twenty-four hours of when Jimmie Rodgers started recording (at the same place, Bristol, on the Virginia-Tennessee line). Between them the Carters and Rodgers just about created what came to be known as country music. The Carters were A. P., who wrote the songs (although some say the women helped write some of those credited to him) and sang bass; his wife Sara, who sang lead; and his sister-in-law Maybelle, who sang tenor and was one of the first musicians to use the guitar as a lead instrument. Maybelle's style, thumb-picking the melody on the bass strings, was invaluable to the trio's sound and is still widely imitated by flatpick as well as fingerpick players (Woody Guthrie named her down-up rhythm stroke on the treble strings "the church lick"). So this is legendary stuff, all right, pre-Bluegrass and more—practically every song in this package is itself a legend. RCA has got the sound reasonably clean and augmented the record with a booklet of many pictures and some text by Maybelle's son-in-law, Johnny Cash. If you're at all serious about American music and where it came from, you can't be without this.

N.C.

MARY McCASLIN AND JIM RINGER: The Bramble & the Rose. Mary McCaslin (vocals, guitar, banjo); Jim Ringer (vocals, guitar); instrumental accompaniment. Mama Love; Strawberry Roan; Canaan's Land; Oh Death; Stages of My Life; and seven others. PHILO PH1055 $7.98.

Performance: Suburban "folk"
Recording: Good

Most of Mary McCaslin and Jim Ringer's songs are either based on traditional tunes or are new pieces that carefully observe all the established rules for "folk" music. Their performances are meticulous, precise, and "pure" (whatever the hell that means), but they also sound tailored to please the kind of suburban folkie who loves the great outdoors so much that he feels impelled to buy a new leather-upholstered Jeep just so he can go out and explore it—on weekends.

P.R.
It's a scientific fact that the two sides of your brain control entirely different aspects of your awareness. One side understands things like logic and mathematics, while the other responds to the aesthetics of art and music.

**The side that appreciates specs.**
The analytical side of you demands nothing less than the finest measurable performance today's stereo equipment has to offer.

And for that half of your brain, Sanyo's PLUS SERIES will prove spectacular. PLUS SERIES receivers span from 55 through 200 watts RMS per channel (at 4 or 8 ohms, 20-20,000 Hz) with as little as 0.009% maximum total harmonic distortion.

PLUS SERIES cassette decks offer a frequency response of up to 20 Hz - 20,000 Hz — the entire range of human hearing.

PLUS SERIES turntables feature quartz speed control to reduce wow & flutter to a totally imperceptible 0.025% (WRMS).

But while our great specs will convince your analytical side that these Sanyo components are something special, they don't mean much to the intuitive part of you that goes by what it hears.

**The side that appreciates sound.**
The other hemisphere of your brain is only concerned with the emotional impact of sound. Breathtakingly clear, lifelike music.

And for once, the two sides of your brain can agree on something. Because, while one can analyze and appreciate the PLUS SERIES' specs, the other experiences music that is as real and unforgettable as it was intended to be.

The PLUS SERIES from Sanyo is an entirely new world of audio components.

Check it out today at your nearest Sanyo dealer. Both sides of you will be very impressed.
THE WHOLE SIDE MOVES VERY NICELY, ACCELERATING AND ARRANGED BY SHAW, CONSTITUTE HIS MOST INTERESTING WORK TO DATE. AS IT HAPPENS, "WOODY III" ALSO PRESENTS THE THIRD WOODY SHAW (a family photo of all three is the album's cover illustration). AS SHAW'S ARTISTIC INTEGRITY THAT IN HIS THIRD COLUMBIA ALBUM HE STILL HAS NOT INTRODUCED SO MUCH AS A HINT OF ARTIFICIAL FLAVORING. TO MAKE MATTERS EVEN BETTER, WOODY SHAW HAS NOT ONLY KEPT HIS MUSIC HONEST, HE HAS DEVELOPED AND IMPROVED IT WITH EACH NEW ALBUM.

THIS NEW ONE IS ENTITLED "WOODY III" NOT ONLY BECAUSE IT IS HIS THIRD COLUMBIA SET BUT ALSO BECAUSE ITS PREPARATION ROUGHLY COINCIDED WITH THE BIRTH OF WOODY LOUIS ARMSTRONG SHAW, THE THIRD WOODY SHAW (a family photo of all three is the album's cover illustration). AS IT HAPPENS, "WOODY III" ALSO PRESENTS THE THIRTY-FIVE-YEAR-OLD MUSICIAN IN THREE DIFFERENT SURROUNDINGS: WITH A TWELVE-PIECE BAND ON THE THREE CUTS THAT MAKE UP SIDE ONE; WITH SMALL GROUPS IN A STUDIO SETTING; AND WITH HIS WORKING QUINTET AT THE VILLAGE VANGUARD DURING THE SAME 1978 ENGAGEMENT THAT YIELDED SHAW'S SECOND COLUMBIA ALBUM, "STEPPING STONES" (JC 35560).

SIDE ONE CAN BE REGARDED EITHER AS THREE SEPARATE PIECES OR AS A LOOSELY CONNECTED WHOLE, BUT WHICHEVER WAY ONE CHOSES TO DESCRIBE THEM, THESE THREE SELECTIONS, COMPOSED AND ARRANGED BY SHAW, CONSTITUTE HIS MOST INTERESTING WORK TO DATE. IT IS HERE THAT HE EMPLOY THE LARGER ENSEMBLE, WHICH INCLUDES THREE SAXOPHONISTS, THREE BRASS PLAYERS INCLUDING SHAW HIMSELF, AND THREE PERCUSSIONISTS. THE WHOLE SIDE MOVES VERY NICELY, ACCELERATING TO A MADLY SWINGING RUSH AT ONE POINT IN THE SECOND PIECE, AND ALL THE TIME SHAW'S SCORE CARESS AND MUDGES THE SOLOS, NOT ONCE BREAKING THE FLOW OF THE MUSIC. AND FLOW IT DOES, WITH SHAW'S CORNET ALTERNATELY FLYING AND DIVING INTO THE THICK OF THINGS ON WOODY I: ON THE NEW ARK AND SHAW, ALTO MAN JAMES SPAULDING, AND TRUMPETIST STEVE TURRE RIDING THE SWINGING, SWELLING RAPIDS CREATED BY BASSIST BUSTER WILLIAMS AND THE PERCUSSIONISTS ON WOODY II: OTHER PATHS. THE SIDE ENDS WITH ALL THE SERENITY OF A MIRROR-CALM LAKE, GENTLY RIPPING AS SHAW'S FLUGELHORN DIPS INTO THE LOVELY MELODY OF WOODY III: NEW OFFERINGS, A BEAUTIFUL BALLAD THAT ALSO MAKES ROOM FOR INDIVIDUAL STATEMENTS FROM PIANIST ONAJE ALLAN GUMBS AND TRUMPETIST CURTIS FULLER.

THE SECOND SIDE OF "WOODY III" HAS A DIFFERENT BUT NO LESS APPEALING CHARACTER. WE HEAR A SEXTET, QUARTET, AND QUINTET, IN THAT ORDER, PLAYING THREE SIZZLING NUMBERS THAT CAPTURE THE SPIRIT OF JAZZ TWO DECADES PAST. I DEVOTE LESS SPACE TO THIS SIDE NOT BECAUSE IT DESERVES LESS THAN THE OTHER, BUT BECAUSE IT IS MORE TYPICAL OF SHAW'S PAST EFFORTS. IN SHORT, "WOODY III" IS A VERY FINE ALBUM OF JAZZ, THAT ENDANGERED IDIOM THAT SO STUBBORNLY REFUSES TO DIE. THANK YOU, WOODY SHAW.

—CHRIS ALBERTSON

WOODY SHAW: WOODY III. WOODY SHAW (CORNET, FLUGELHORN); JAMES SPAULDING (ALTO SAXOPHONE); STEVE TURRE, CURTIS FULLER (TRUMPET, FLUGELHORN); ONAJE ALLAN GUMBS (PIANO); OTHER MUSICIANS. WOODY I: ON THE NEW ARK. WOODY II: OTHER PATHS. WOODY III: NEW OFFERINGS. TO KILL A BRICK; ORGAN GRINDER; ESCAPE VELOCITY. COLUMBIA JC 35977 $7.98. © JCA 35977 $7.98. © JCT 35977 $7.98.

RECORDING OF SPECIAL MERIT

TED CURSON: THE TRIO. TED CURSON (TRUMPET, FLUGELHORN, PICCOLO TRUMPET, PERCUSSION); RAY DRUMMOND (BASS); ROY HAYNES (DRUMS). SNAKE JOHNSON; ROUND ABOUT MIDNIGHT; QUICKSAND; AND TWO OTHERS. INTERPLAY IP-7722 $7.98 (FROM INTERPLAY RECORDS, P.O. BOX 93, CALABASAS, CA. 91302).

PERFORMANCE: HOT
RECORDING: GOOD

I DON'T CARE IF TED CURSON'S HORN LETS OUT A FEW THIN NOTES HERE AND THERE; I WOULDN'T EVEN CARE IF IT MISSED A FEW (AND I BELIEVE IT DOES). WHAT I DO CARE ABOUT IS HONESTY AND SPIRIT, AND THIS TRIO SESSION RECORDED LAST JANUARY IS OVERFLOWING WITH BOTH. ADD IN A FERTILE MUSICAL IMAGINATION, THREE-WAY RAPPORT, AND A WELL-BALANCED PROGRAM OF ORIGINAL COMPOSITIONS AND JAZZ STANDARDS, AND YOU HAVE A GRAND TOTAL Indeed.

CURSON HAD BARELY ARRIVED IN NEW YORK (FROM PHILADELPHIA) BEFORE HE WAS SWEEPED INTO THE MAINSTREAM OF MID-FIFTIES JAZZ. JIMMY HEATH GAVE HIM LESSONS. MILES DAVIS GAVE HIM ENCOURAGEMENT, AND CHARLES MINUS GAVE HIM WORK. BUT IN THE LATTER HALF OF THE SIXTIES, WHEN RINGO AND LENNON REPLACED ROLLINS AND LATEEF AS NAMES BANDIED ABOUT IN CAMPUS CONVERSATIONS, CURSON, LIKE SO MANY OF HIS COLLEAGUES, WAS FORCED TO SHIFT HIS ARENA OF ACTIVITY TO EUROPE, BECOMING A FIXTURE AT JAZZ FESTIVALS AND GETTING THE KIND OF ATTENTION HE SHOULD HAVE HAD IN HIS OWN COUNTRY.

DRUMMER ROY HAYNES CAME OF AGE DURING THE EARLY FIFTIES, A TRANSITIONAL PERIOD IN JAZZ. HIS WONDERFUL FLEXIBILITY MADE HIM ONE OF THE MOST VERSATILE DRUMMERS OF THE POST-BOP ERA, AND HE FITS WELL INTO THIS TRIO, ALONG WITH EVEN GREATER ENTHUSIASM THAN HE HAS SHOWN ON HIS OWN GALAXY ALBUMS RECENTLY. I MUST CONFESSION THAT I HAVE NOT PREVIOUSLY HEARD OF BASSIST RAY DRUMMOND, BUT I STRONGLY SUSPECT WE WILL ALL BE HEARING A GREAT DEAL MORE FROM HIM.

THE TRIO GETS OFF TO A FLYING START WITH SNAKE JOHNSON. A CURSON COMPOSITION TAKEN AT A BREAKNECK TEMPO THAT CARRIES OVER INTO THE NEXT TRACK. SONNY ROLLINS' PENT UP HOUSE. THE TWO TUNES PRODUCE VIRTUOSO PERFORMANCES FROM ALL CONCERNED, WITH CURSON'S HORN SEARING AS IT SOARS ABOVE HIS TWO COHORTS' STEAMING, BUBBLING RHYTHM. BOTH TEMPO AND MOOD CHANGE FOR THE SIDE'S LAST SEVEN MINUTES. CURSON'S QUICKSAND, IN WHICH THE TEMPO SHIFTS TO 6/8 TIME AND THE MOOD BECOMES JEALOUSLY SPANISH. CURSON WROTE THIS TUNE SOME FIFTEEN YEARS AGO, AND HE ORIGINALLY RECORDED IT FOR THE "TEARS FOR DOLPHY" ALBUM (ARISTA AL 1021). STRAIGHT ICE, ANOTHER CURSON TUNE, WHICH HE RECORDED ON ATLANTIC DURING THE SAME PERIOD, HAS A RELAXED, BLUESY FEEL TO IT AND CONTAINS SOME VERY SENSITIVE PLAYING BY THE TRIO.

RECORDING: GOOD
PERFORMANCE: HOT

I DON'T CARE IF TED CURSON'S HORN LETS OUT A FEW THIN NOTES HERE AND THERE; I WOULDN'T EVEN CARE IF IT MISSED A FEW (AND I BELIEVE IT DOES). WHAT I DO CARE ABOUT IS HONESTY AND SPIRIT, AND THIS TRIO SESSION RECORDED LAST JANUARY IS OVERFLOWING WITH BOTH. ADD IN A FERTILE MUSICAL IMAGINATION, THREE-WAY RAPPORT, AND A WELL-BALANCED PROGRAM OF ORIGINAL COMPOSITIONS AND JAZZ STANDARDS, AND YOU HAVE A GRAND TOTAL Indeed.

CURSON HAD BARELY ARRIVED IN NEW YORK (FROM PHILADELPHIA) BEFORE HE WAS SWEEPED INTO THE MAINSTREAM OF MID-FIFTIES JAZZ. JIMMY HEATH GAVE HIM LESSONS. MILES DAVIS GAVE HIM ENCOURAGEMENT, AND CHARLES MINUS GAVE HIM WORK. BUT IN THE LATTER HALF OF THE SIXTIES, WHEN RINGO AND LENNON REPLACED ROLLINS AND LATEEF AS NAMES BANDIED ABOUT IN CAMPUS CONVERSATIONS, CURSON, LIKE SO MANY OF HIS COLLEAGUES, WAS FORCED TO SHIFT HIS ARENA OF ACTIVITY TO EUROPE, BECOMING A FIXTURE AT JAZZ FESTIVALS AND GETTING THE KIND OF ATTENTION HE SHOULD HAVE HAD IN HIS OWN COUNTRY.

DRUMMER ROY HAYNES CAME OF AGE DURING THE EARLY FIFTIES, A TRANSITIONAL PERIOD IN JAZZ. HIS WONDERFUL FLEXIBILITY MADE HIM ONE OF THE MOST VERSATILE DRUMMERS OF THE POST-BOP ERA, AND HE FITS WELL INTO THIS TRIO, ALONG WITH EVEN GREATER ENTHUSIASM THAN HE HAS SHOWN ON HIS OWN GALAXY ALBUMS RECENTLY. I MUST CONFESSION THAT I HAVE NOT PREVIOUSLY HEARD OF BASSIST RAY DRUMMOND, BUT I STRONGLY SUSPECT WE WILL ALL BE HEARING A GREAT DEAL MORE FROM HIM.

THE TRIO GETS OFF TO A FLYING START WITH SNAKE JOHNSON. A CURSON COMPOSITION TAKEN AT A BREAKNECK TEMPO THAT CARRIES OVER INTO THE NEXT TRACK. SONNY ROLLINS' PENT UP HOUSE. THE TWO TUNES PRODUCE VIRTUOSO PERFORMANCES FROM ALL CONCERNED, WITH CURSON'S HORN SEARING AS IT SOARS ABOVE HIS TWO COHORTS' STEAMING, BUBBLING RHYTHM. BOTH TEMPO AND MOOD CHANGE FOR THE SIDE'S LAST SEVEN MINUTES. CURSON'S QUICKSAND, IN WHICH THE TEMPO SHIFTS TO 6/8 TIME AND THE MOOD BECOMES JEALOUSLY SPANISH. CURSON WROTE THIS TUNE SOME FIFTEEN YEARS AGO, AND HE ORIGINALLY RECORDED IT FOR THE "TEARS FOR DOLPHY" ALBUM (ARISTA AL 1021). STRAIGHT ICE, ANOTHER CURSON TUNE, WHICH HE RECORDED ON ATLANTIC DURING THE SAME PERIOD, HAS A RELAXED, BLUESY FEEL TO IT AND CONTAINS SOME VERY SENSITIVE PLAYING BY THE TRIO.
The Bose® 901 – past, present, future.

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

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

Future At Bose we have decided that "901" will continue to be the designation of the product that represents the state-of-the-art of our technology — whatever size, shape or form that product may take. In our research we continue to look at any and all technologies and product concepts that might hold possibilities for better sound reproduction. Consistent with the past, we will introduce new technology into the 901 speaker as it is developed — often without announcement. This is our dedication to the goal that whenever you invest in the Bose® 901® system you will receive the latest technology and the best in music reproduction.

Better sound through research

CIRCLE NO. 12 ON READER SERVICE CARD
Curson himself. And, speaking of moods, the album—programmed to reflect gradually decelerating temps—ends with a soulful ten-minute reading of Thelonious Monk's 'Round About Midnight, which shows bassist Drummie Wynn's individualism.

Albums like this one enrich our lives and help to offset the candy-bar fare that others pass off as jazz these days. C.A.

RECORDING OF SPECIAL MERIT

JAY McSHANN: The Big Apple Bash. Jay McShann (piano, vocals); Herbie Mann (flute, tenor saxophone, clarinet); Gerry Mulligan (baritone and soprano saxophones); John Scofield (guitar); Jack Six, Eddie Gomez, Milt Hinton (bass); Joe Morello, Connie Kay (drums); Dicky Wells (trumpet); other musicians. Crazy Legs & Friday Strut; Georgia on My Mind; Dickie's Dream; and four others. ATLANTIC SD 8804 $7.98. © TP 8804 $7.98. © CS 8804 $7.98.

Performance: Terrific

Recording: Very good

Jay McShann, the great Kansas City pianist, singer, and arranger, here presents a delightful album of tasty, straight-ahead jazz with a fine cast of players including Gerry Mulligan, Milt Hinton, Doc Cheatham, Dicky Wells, and—believe it or not, folks—Herbie Mann playing as he really means it. All seven selections are done with carefree verve; hearing all these pros enjoying themselves is half the fun of the album. My favorite cuts are McShann's Crazy Legs & Friday Strut and Jumpin' the Blues (the latter written with Charlie Parker) and Duke Ellington's Blue Feelings, with Doc Cheatham conjuring up the spirit of Cootie Williams.

McShann's vocals are a special treat; he's a home-cooking singer—nothing fancy but all mighty satisfying. Any time he wants to step into my parlor and play piano he's more than welcome; I'll even buy a piano. Hell, I'll even buy a parlor!

RECORDING OF SPECIAL MERIT

ART PEPPER: Art Pepper Today. Art Pepper (alto saxophone); Stanley Cowell (piano); Cecil Mcbee (bass); Roy Haynes (drums); Kenneth Nash (congas, percussion). Miss Who?; Lover Come Back to Me; Chris's Blues; and three others. GALAXY GXY-5119 $7.98.

Performance: Ever-modern Art

Recording: Very good

From all reports, Art Pepper's long-awaited autobiography—seven years in the making, due out around this time—is going to shock the literary jazz establishment, and if Pepper's frank account of life behind bars (he served several years in prison on narcotics charges) can shake the living pomposity out of some of these writers, he will have done jazz a great service. As it is, Art Pepper continues to earn our highest praise for his musical performances, for he is as forthright when expressing himself through this alto saxophone as they say he is when committing his past to paper. Pepper's latest album, "Art Pepper Today," teams him up with a superb rhythm section (make that trio, for rhythm is but a part of their business) and an extra percussionist on one track, Mambo Koyama, the only selection I found to be less than excellent. The quartet kicks things off with Miss Who?, a lively and very thinly veiled Sweet Georgia Brown on which everybody gets a chance up front. Unfortunately, Mambo Koyama follows, destroying the low-key ambience and diverting the attention of the listener as a particularly annoying example of bad programming, but it's all uphill from there as the quartet returns for two standards, an urgent Lover Come Back to Me and a tender These Foolish Things, a peppery Chris's Blues, and a lovely original ballad, Patricia. The last couple of records has peppered my mind as fine a slice of today's Art as I have ever heard, and if you happen to have caught my previous reviews of Art Pepper here, you'll know that's saying something. C.A.

DELLA REESE: One of a Kind (see Best of the Month, page 94).

COLECTION


Performance: Variable

Recording: Good

This anthology of selections from ten years of performances at the New Orleans Jazz and Heritage Festival is a mixed blessing, although the overall effect is warming. The standout performance is by the remarkable Eubie Blake, now in his nineties, playing as though he were fifty years younger as he rips through his own sassy and flirtatious Charles.

The late Charles Mingus and young Henry Butler both celebrated this year. The latter, playing steel drums, has only twenty-five seconds on Brown Skin Girl. Unfortunately, he seems to lose his touch after thirty seconds. However, the spirit of Cootie Williams is well represented by JAY McSHANN: The Big Apple Bash, and by these Foolish Things, which are as fine a slice of today's Art as I have ever heard, and if you happen to have caught my previous reviews of Art Pepper here, you'll know that's saying something.

J.V.

CIRCLE NO. 31 ON READER SERVICE CARD
THE SPARKOMATIC SOUND.
CAR STEREO FOR THE TRAVELIN’ MAN
WITH EARS OF EXPERIENCE.

Until now, comparing car stereo to home stereo was like night to day. Auto sound equipment was completely in the dark. Powerless to produce serious audio reproduction. Hopelessly lacking in high fidelity specs. For a travelin’ man with ears of experience, this was the pure “pits”.

But that’s all over now. Now that Sparkomatic has introduced its radically new High Power Car Stereo series. With exacting high performance high fidelity credentials. Tuners with exceptional FM sensitivity; credible multipath signal rejection; superb separation; integrated cassette or 8-track with virtually inaudible distortion and unnoticeable wow and flutter.

The power: a bone shaking 45 watts.

Sparkomatic’s SR 3300 High Power AM/FM Stereo with Auto Reverse Cassette has some other impressive high fidelity touches as well. Like feather touch electronic controls and sophisticated tape handling capabilities. All told, a component-looking package that delivers faithful high fidelity pleasure in its purist form.

And Sparkomatic High Fidelity Speakers complete a car sound system that produces the highest form of earotic experience.

Visit a Sparkomatic dealer and get a Sparkomatic high power car stereo demonstration soon.

For our free catalogs on Car High Fidelity write: “For The Travelin’ Man”, Dept.SR, Sparkomatic Corporation, Milford, PA 18337
Charles Mingus was a man of wildly vacillating temperament; he could shift his mood from hot to cold and back to hot before you could play a twelve-bar chorus at a moderate tempo. I recall a night, some twenty years ago, when Mingus startled a dedicated Philadelphia club audience with an emotional eruption that in one swoop landed a fist on his trombone player's mouth and slammed the keyboard lid down within a hair's breadth of his fast-reacting pianist's fingers. (To make matters all the more painful and awkward, the incident occurred during a memorial performance for a recently deceased musician whose family was present.) At the opposite end of the Mingus mood spectrum was the jovial, witty man who entertained his fellow railroad passengers between Trenton and New York as we headed home from the tapings of a program in my 1972 Jazz Set television series. Now Mingus is gone and the obligatory legacy albums have begun to appear. Three recent releases—one on Columbia, the others on Atlantic—would undoubtedly have evoked comparably opposite reactions from Mingus.

Taking worst things first, "Nostalgia in Times Square," in Columbia's very inconsistent Contemporary Masters series, oversteps the bounds of good taste and ethical conduct to land somewhere in the area of exploitation. Not counting side one, which is all new (to us, that is), this two-record set contains 1 hour, 3 minutes, and 14 seconds of music, 42 minutes and 38 seconds of which have previously been released on "Mingus Ah Um," CS 8171, and "Mingus Dynasty." CL 1440; the remainder was supposed to go into the old trash can. To put it plainly, what producer Teo Macero ten years ago edited from these Mingus performances, reissue producers Jim Fishel and Frank Abbey have now restored. The arrangements and orchestrations for this set were done by Jack Walrath under Mingus' supervision and with the help of tape recordings; the Brecker brothers, and guitarist Larry Coryell. If the ensemble sounds uncoordinated—and it does—it is probably deliberate, a quaint Mingus hallmark that in lesser hands would have sounded like fumbling musicianship. Also endearing is the touch of Spain—or "Spanish tinge," as Jelly Roll Morton used to call it—that is evident early on in the ceremonial-sounding orchestral punctuation with which Mingus bridges some of the solos.

Side two contains three selections, two of which have appeared on earlier Mingus recordings: Wednesday Night Prayer Meeting and Devil Woman. The latter is a deep-rooted blues that sprouts solos by Coryell and the Brecker brothers. Prayer Meeting, first held by Mingus on another Atlantic album almost twenty-one years ago, moves at a fast, swinging clip once the obligatory, somewhat stagy singing/hand-clapping introduction is out of the way. Only one bass player, Eddie Gomez, is heard on this side, and he does a fine job of walking this meeting through a series of statements by the Breckers, tenor saxophonist Ricky Ford (who came to Mingus from Ellington and is excellent), trumpeter Jack Walrath (whose association with Mingus dated back to 1974), and Coryell before stepping up front himself. Last, but far from least, there is a lovely Mingus ballad, "Carolyn "Keki" Mingus," with Lee Konitz, Michael Brecker, and Coryell bouncing imaginative inventions off a lush, multicolored orchestral background. The arrangements and orchestrations for this date were done by Jack Walrath under Mingus' supervision and with the help of tape recordings and piano sketches. "Me, Myself an Eye" was Mingus' last recording, the result of two sessions held in January 1978, about a year before he died of a disease that had confined him to a wheelchair for some time. For the first time in his more than thirty years as a leader, Mingus led a recording session without playing the bass himself. Bass players are often content with a low profile, but Mingus made sure we always heard him, and his work on the instrument was a vital part of the performances he led. The round, assertive sound of his bass is sorely missed on this album, a loss even such fine players as Eddie Gomez and George Mraz barely begin to compensate for. Unable to move his hands, Mingus also had to delegate the job of conducting to a colleague, his long-time associate saxophonist Paul Jeffrey; but he was able to supervise and call the shots himself.

Fortunately, Atlantic has also released the obligatory memorial album, but unlike the Co-

The Mingus Legacy
lumbia set, "Passions of a Man" has been assembled with taste and reverence by Ilhan Mimaroglu, who produced nearly half of the material. The three-record set contains some of the high points of Mingus' recording career from 1956 to 1977, starting with the outstanding *Pithecanthropus Erectus* and ending with his moving tribute to Lester Young, *Goodbye, Porkpie Hat*. Following the final music track there is a 3½-minute bonus, excerpts from a conversation Mingus had with Mimaroglu in 1975. Mingus talks about his days as a West Coast session musician, how his father wanted him to become a postal worker, his likes and dislikes in music. "I feel when I have a new record coming out," he says, "maybe this time they'll hear it." If all the posthumous Mingus publicity has aroused your curiosity and you find yourself wondering what the fuss is about, "Passions of a Man" will give you a very good idea. "Me, Myself an Eye" will serve well to round out an already existing Mingus collection. "Nostalgia in Times Square—The Immortal 1959 Sessions" should be avoided, though the original releases of these sessions are worth searching for.

—Chris Albertson

**CHARLES MINGUS: Nostalgia in Times Square—The Immortal 1959 Sessions.** Charles Mingus (bass); Richard Williams (trumpet); Jimmy Knepper (trombone); John Handy, Shafi Hadi, Booker Ervin, Benny Golson, Jerome Richardson (saxophones); Roland Hanna, Horace Parlan (piano); Teddy Charles (vibraphone); Dannie Richmond (drums). *Pedal Point Blues; GG Train; Girl of My Dreams; Strollin’; Jelly Roll; Boogie Stop Shuffle; Open Letter to Duke; New Now Know How; Birdcalls; Stop! Things Ain’t What They Used to Be; Pussy Cat Dues; Song with Orange; Gunslinging Bird.* COLUMBIA JG 35717 two discs $9.98.

**CHARLES MINGUS: Me, Myself an Eye.** Randy Brecker, Jack Walrath (trumpet); Lee Konitz (alto saxophone); George Coleman, Michael Brecker, Ricky Ford (tenor saxophones); Larry Coryell (guitar); Eddie Gomez, George Mraz (bass); Steve Gadd, Joe Chambers, Dannie Richmond (drums); Paul Jeffrey cond. *Three Worlds of Drums; Devil Woman; Wednesday Night Prayer Meeting; Carolyn "Keki" Mingus.* ATLANTIC SD 8803 $7.98, © TP 8803 $7.98, © CS 8803 $7.98.

**CHARLES MINGUS: Passions of a Man.** Charles Mingus (bass, piano, vocals); Willie Dennis, Jimmy Knepper (trombone); Pepper Adams, Jackie McLean, J. R. Monterose, Shafi Hadi, John Handy, Booker Ervin, Rahsaan Roland Kirk (saxophones); Mal Waldron, Wade Legge, Horace Parlan, Don Pullen (piano); Dannie Richmond (drums). *Pithecanthropus Erectus; Profile of Jackie; Reincarnation of a Lovebird; Haitian Fight Song; Wednesday Night Prayer Meeting; Cryin’ Blues; Devil Woman; Wham Bam Thank You Ma’am; Passions of a Man; Tonight at Noon; Passions of a Woman Loved; Duke Ellington’s Sound of Love; Better Git Hit in Your Soul; Sue’s Changes; Canon; Free Cell Block F; ‘Tis Nuts U.S.A.; Goodbye, Porkpie Hat.* ATLANTIC SD 3-600 three discs $15.98, © TP 3-600 $15.98, © CS 3-600 $15.98.
J. S. BACH: Cantata, Meine Seele rühmt und preist (BWV 189); Cantata, Ich weiss, dass mein Erlöser lebt (BWV 160); Aria, Ach windet Euch nicht so, geplagte Seelen (BWV 245c). Peter Schreier (tenor); Lucerne Festival Strings, Peter Schreier cond. VANGUARD VSD 71226 $7.98.

Performance: Very good
Recording: Very good

Contemporary scholars doubt the authenticity of these two cantatas, but the unsigned jacket notes here assure us that they were, at the very least, revised by the Master's hand. Both are of moderate length and moderate musical interest. There's a nice violin obbligato in "Meine Seele rühmt und preist," with its lively bassoon counterpoint, is at times awkward, but the instrumental writing, with its lively bassoon counterpoint, is endlessly inventive.

Vocal difficulties do not faze Peter Schreier, who is probably the best tenor interpreter of this repertoire today. He sings purely, with clear articulation and pronunciation, comfortable in all registers, relaxed in fioritura. Since he is singing nearly all the time I don't quite see how he can conduct as well. But that's what the label says. In any case, the ensemble is small and the results are excellent. G.J.

J. S. BACH: Cantata No. 50, Nun Ist das Heil . . . (see CHARPENTIER)

J. S. BACH: St. John Passion (BWV 247).

Heiner Hopfner (tenor), Evangelist; Nikolaus Hillebrand (bass); Jesus; Frank Sahesch-Pur (boy soprano); Roman Hankeln (boy alto); Aldo Baldin (tenor); Hans Georg Ahrens (bass); Regensburger Domspatzen; Collegium St. Emmeram, Hanns-Martin Schneidt cond.

DEUTSCHE GRAMMOPHON ARCHIV 2710 027 three discs $26.94. © 3376 015 $26.94.

Performance: Dramatic
Recording: Fine

Unlike the St. Matthew Passion, the St. John Passion was subjected to four revisions over a period of some twenty years. The most radical substitutions were made in the second revision, and the third and fourth gradually turned it to a version very much like the first. This recording presents a combination of the first and fourth versions together with a supplementary side of different arias and choruses from the second version. Thus the set contains all the music Bach wrote for the St. John Passion.

Hanns-Martin Schneider paces his dramatic reading so as to hurl the listener headlong to the Judgment and Crucifixion. No time is wasted between the set numbers, and the arias and chorales fit into the flow of the action rather than being set apart as supplementary contemplation. The twenty-five male singers of the Regensburg Domspatzen, combined with the authentic instruments of the Collegium St. Emmeram, produce a clear, well-defined sound that sets forth the contrasting aspects of the music beautifully. Nothing is forced, clarity and lightness prevail, and the inherent drive of the music speaks for itself. The turba choruses with their plethora of imitation and jagged instrumental figuration are particularly pithy and bring out the ugliness and greed of the mob. "Lasset uns den nicht zerteilen" is a real tour de force. The sonority of the chorales, in which the voices are doubled by the instruments, is in complete contrast and offers voluptuous repose. The individual sounds of the old instruments are best heard in the obbligato arias, which make use of such obsolete curiosities as the oboe da caccia, early flauto traverso, viola d'amore, and the orbo. The playing is natural-sounding and eschews those over-exaggerated mannerisms of articulation that can be so unsettling.

Heiner Hopfner and Nikolaus Hillebrand, as the Evangelist and Jesus respectively, are perfectly cast and catch the delicate balance between dramatic narrative and liturgical dignity, but perhaps the finest singing here is by tenor Aldo Baldin. His powerful interpretation of "Ach, mein Sinn" is outstanding. The only thing that prevents this performance from being ideal is the use of a boy soprano and boy alto as soloists. Rather than producing the pure head tones of their English counterparts, they use a chest tone. Both have pitch problems and sound like old women. Authentic or not, their arias cry for better-developed voices and mature musicianship.

Be sure not to regard the supplementary choruses of side six as mere vocal curiosities. "Himmel reisse, Wellerhebe" and "Zerschmetter mich, ihr Felsen und ihr Hügel" are two of the most thrilling arias Bach ever wrote, and he probably omitted them from the final version only because they were too operatic for a Passion. They are impressive enough to stand on their own and make a welcome addition to any record collection.

S.L.


Performance: Carter notable
Recording: Dry and close

Michael Rudiakov has a long association with the music of Elliott Carter, having performed and recorded Carter's string quartets with the Composers String Quartet, of which he was formerly a member. Carter composed the strong and attractive cello sonata for Rudia-
kov's teacher, Bernard Greenhouse, who performed and recorded it many years ago. The sonata, although difficult, is more varied and accessible than Carter's later work, particularly in this fine performance by first-class musicians with an affinity for new music. The Bach suite, although well played, suffers from a dry, close-up, warts-and-all recording that would flatter no music or performer. The sonata sound is more grateful.

**RECORDINGS OF SPECIAL MERIT**

**J. S. BACH: Suites for Orchestra: No. 1, in C Major (BWV 1066); No. 3, in D Major (BWV 1068).** English Concert, Trevor Pinnock cond. **ARCHIV 2533 411 $8.98, © 3310 411 $8.98.**

**Performance: Brilliant**

**Recording: Tops**

**J. S. BACH: Concerto for Flute, Violin, and Harpsichord in A Minor (BWV 1044); Suite for Orchestra No. 2, in B Minor (BWV 1067).** Sir Malcolm Sargent (violin); Stephen Preston (flute); English Concert, Trevor Pinnock cond. **ARCHIV 2533 410 $8.98, © 3310 410 $8.98.**

**Performance: Authentic**

**Recording: Tops**

The English Concert is a splendid Baroque chamber orchestra consisting of some of London's finest young performers on early instruments (or modern reproductions thereof). Governed rigorously by the latest research on Baroque performance practices, the group plays at the "old" pitch (A equals 415) and makes use of rhythmic alterations and sharply defined articulations. It is not, of course, the only group in existence to use such devices, but it is one of the few able to use them and make music at the same time. The sound they produce is clear as a bell, with each inner part audible, and their tempos are, for the most part, well chosen. The fast dances in the works here at first seem a little on the slow side, but the clarity of articulation allows one to hear more; the result is more exciting than hearing less at a quicker tempo. Besides, the group has a natural bounce that is contagious. Similarly, the slow tempos seem a bit fast, but this approach sustains a longer line, which permits one to hear large musical units. Only occasionally—in the opening of the B Minor Suite, for example—does the combination of a quick tempo and double dotting result in a skittishness unbecoming to the music.

The ornamentation is precise and accurate. Leader Trevor Pinnock really understands the use of appoggiaturas and the elegance of long ones. Rhythmic alterations are kept to a minimum, as is added ornamentation. When it is added, however, the result is striking, as in the celebrated "Air on the G String" (from the Suite No. 3), a movement that almost nobody else has had the courage to ornament.

Of the two discs, that with the C Major and D Major Suites comes off better. The trumpets in the D Major Suite are splendid and really stand out against the small body of strings and oboes. The other disc offers the rarely heard triple concerto, a sort of companion piece to the Fifth Brandenburg. It is an austere work filled with intricate writing and a monolithic web of triplets. The performance is almost too fast for its own good, and one wishes that the harpsichord were more prominent so that it could be heard as the soloist it is. Stephen Preston's contribution to the B Minor Suite is elegant, and, unlike many flutists around today, he stresses the solo part's brooding nature rather than its brilliance. All in all, these discs are a firm step forward in the recorded use of early instruments and Baroque performance practice. We still lack one suite in the series, and I wonder what Pinnock will couple it with. **S. L.**

**BEETHOVEN: Sonata in F Major, Op. 17: Mozart Variations** (see WOELFL)

**BERG: Lulu.** Anja Silja (soprano), Lulu; Brigitte Fassbaender (mezzo-soprano), Countess Geschwitz; Trudliese Schmidt (mezzo-soprano), School Boy; Harald Pröglof (speaker), Dr. Goll; Horst Lauenthal (tenor), Painter; Walter Berry (baritone), Dr. Schön; Josef Hoperwieser (tenor), Alwa; Kurt Moll (bass), Animal Trainer; Manfred Schenk (bass), Acrobat; Hans Hotter (bass), Schigolch; others. Vienna Philharmonic Orchestra, Christoph Dohnányi cond. **LONDON OSA 13120 three discs $26.94, © 3 13120 $26.94.**

**Performance: Impressive but Incomplete**

**Recording: Excellent**

In a way, this is a rather unfortunate time to release a new recording of the old, incomplete Lulu. The three-act opera as Alban Berg conceived it has yet to find its light in the theater at the Paris Opera under Pierre Boulez, and a recording of that version is surely not far off. The old version suffers in every way—musically, dramatically, morally—from its incompleteness, but even in this form the work has had a tremendous impact on modern opera. It has been surprisingly well served on records, too. This London release, which may be the best yet, is the fourth recorded version of what is after all a twelve-tone opera of no small difficulty.

The figure of the liberated femme fatale is a leitmotiv in the turn-of-the-century German literary and cultural life. Such women really existed. Lou Andreas-Salome and Alma Mahler were two of the best-known of the more cultured sort; the unintellectual Lulu types are of course now forgotten. The freedom such women permitted themselves would not now be considered extraordinary, but they must have set male-dominated German bourgeois society on its ear. Even such intellectuals as Frank Wedekind (who wrote the original plays about Lulu) and Berg were at once enthralled and horrified. It seems to me that the opera is not so much about Lulu—she is something of a blank, a Child of Nature as much as an Earth Spirit—as about the reactions of men and a male society to her simple-minded sexuality (is it society—represented by Jack the Ripper—that punishes Lulu in the end, or is it Wedekind and Berg?). Far from being a piece of expressionist or surrealist art, Lulu is a black comedy set to psychological-numerical post-Romantic music.

This recording stirs up these reflections in part because of the ease and almost Romantic normality of the performance. Berg, who was

(Continued on page 134)
Older, pre-Schwann record collectors will undoubtedly recall the first gramophone "bible," the 1936 Gramophone Shop Encyclopedia of Recorded Music compiled with loving care by R. D. Darrell. I was glancing at the book the other day and wondered idly which of the many works of Franz Joseph Haydn might have been available to the 78 rpm record buyer some forty-three years ago. The symphonies were in pretty good shape: ten out of a hundred and four, with a couple of the more popular ones, the Surprise and the Clock, available in more than one version. Only one complete trio was listed then, the famous G Major one with the gypsy-rondo finale, played by Thibaud, Casals, and Cortot. The quartets were rather better off, for a subscription society had been formed and five seven-disc albums had been issued of performances by the Pro Arte Quartet—seventeen works for $87.50. And you could supplement that extravaganza with another half-dozen addi-
tional quartets played by such groups as the Budapest, Léner, and Elman Quartets. The situation of the keyboard sonatas was less promising, with only four recordings, though one of them was the famous 1934 Horowitz rendition of Haydn’s last sonata, in E-flat Maj-
or. Complete operas? Masses? Forget it!

And today? Well, there are two complete sets of the symphonies, Dorati’s on London and Maerzendorfer’s on Musical Heritage So-
ciety (forty-eight and forty-nine LP discs, res-
pectively). as well as rather substantial col-
lections by such conductors as Goberman, Jones, Marriner, Szell, and Bernstein. The trios are being recorded complete by the Beaux Arts Trio, with twelve LPs out so far, and even the operas are gradually finding their way to discs, thanks to Dorati and Hungar-
ton Records. Only two of the Masses are not currently available, and both the string quar-
tets and the keyboard sonatas are available in complete sets. with newer, competitive ver-
sions of various groupings coming out nearly every month from one source or another. The Haydn collector has never had it so good.

What will in time be thoroughly competitive to the integral recording of the quartets by the Dekany and Fine Arts Quartets on Vox (ten three-disc albums) is the still-unfinished Lon-
don set by the England-based Aeolian Quar-
tet, which so far has recorded thirty-three L.P.s of these works in seven volumes. The

make these works anything but textbook ex-
amples of the typical forms of the day: there are such contrapuntal interjections as fugues and canons, the use of only one theme instead of two in many sonata-form movements, for-

as into far-out keys, plenty of examples of Haydn’s favorite device of writing move-

tments with variations on two different themes, textural tricks with the four stringed instruments, and, not least, a most appealing witiness as the composer surprises the ear again and again with a variety of in-jokes. This witiness is particularly well brought out by the Aeolian Quartet, which plays everything with suitably high spirits, infectious rhythms, and plenty of dynamic contrast, lightness, and bounce. If it doesn’t strike you that a Haydn quartet could be funny, I can only advise that you listen to the last move-

tment of Op. 33, No. 2, whose nickname hap-
pens to be The Joke. It must also be said, how-

ever, that Haydn does not neglect the expres-
sive depths, especially in the many slow movements, nor does the Aeolian Quartet fail to convey the composer’s more serious moods. Overall, the ensemble is quite brilli-
ant, polished, and precise. The recording, close-up but with a fair amount of room tone, is good, if not ideally transparent at the fullest

mood. A nod must also be given to the ex-
ceptional annotation by Reginald Barrett-Ayes.

Some years ago I reviewed the Tátrai Quar-
tet’s 1964 recording of Haydn’s Op. 76 set, and I looked forward to hearing the group’s more recent recording of the six quartets of Op. 64, all written in 1790. (This ensemble, in-
cidentally, has also recorded Haydn’s Op. 17, 20, and 77, so I suspect that Hungaroton too will eventually offer a complete set of the quartets.) In contrast to their interpretation of Op. 76, I found the Tátrai’s approach to Op. 64 rather low-key. The best one could say is that these are relaxed, lyrical, and gra-

nuously in short, gemütlich—readings, the sort one might rather enjoy hearing played in one’s living room by an extremely capable group got together for an evening’s music making.

But these six mature quartets are among Haydn’s greatest, and though they are, to be sure, more Haydn and not Beethoven, with a depth to them than the Tátrai manages to sug-
gest. Hungaroton has provided well-blended, well-balanced sonics, fairly close-up but with about the same amount of room tone as in the London set; the string sound is, however, less silky, and there is a slight edginess to that of the modern piano rather than the keyboard in-
struments of Haydn’s own time; one might, therefore, object at times to an overuse of the pedal. Nonetheless, McCabe distinguishes particularly well stylistically between the vari-
ous periods of Haydn’s writing; an early so-

nata sounds quite different under his fingers from one of the later pieces. The recording plan of the series has made the most of this feature, for the sonatas (and the other key-
board pieces used to fill out each album) have not been presented in the accustomed chrono-
logical order but rather mixed in sequence to provide a more variegated listening experi-

cence—and who could object to such a sensi-

tive plan?

This last volume is especially attractive be-
cause it includes several pieces not, strictly speak-
ing, part of the Haydn sonata canon: two sonatas and a set of variations once at-
tributed to Haydn but now considered spuri-
ous or at least doubtful; seven charming key-
board minuets; the fragmentary Sonata No. 28, with McCabe’s own expert completion of the first movement, of which only the first two and the last twenty-one bars have come down to us; and, to my mind, the most unusual and appealing part of the album, a surprisingly effective anonymous keyboard arrangement (made under Haydn’s supervision from his 1787 quartet version) of the Seven Last Words. This last work, consisting of seven movements (described as “sonatas”) plus an

132 STEREO REVIEW
introduction and the concluding “earthquake,” is difficult to bring off in any of Haydn’s own settings— oratorio, orchestra alone, or string quartet— because of the prevailingly slow tempos required. McCabe absolutely distinguishes himself in this performance, which is ravishing in its sensitivity, simplicity, and affection.

McCabe’s sixteen-disc set of the sonatas and miscellaneous keyboard pieces is one of the most ambitious as well as most consistently enjoyable of the various Haydn “completes,” though the competition in this area is remarkably plentiful. There are fifteen discs of Haydn keyboard works played by Arthur Balsam on Musical Heritage Society, the same number played by two harpsichordists and five pianists on Hungaroton, twelve on Telefunken featuring Rudolf Buchbinder, and another dozen on Vox with Fritz Neumeyer playing clavichord, harpsichord, and forte-piano and Elena Kyriakou, Walter Klien, and Martin Galling playing a modern piano.

The question of whether Gilbert Kalish, whose fourth single-disc volume of Haydn piano music (a fifth is in progress) has now been issued by Nonesuch, is likewise engaged in an integral recording cannot be answered at the moment. Regardless, the results so far have been felicitous indeed. His playing, as in the present three sonatas and E-flat Major Variations, is marvelously controlled and refined, with a lovely, limpid tonal quality that reminds me very much of the British pianist Solomon. Kalish appears to eschew to some extent the gutsy temperamental approach, and these are intimate, at times even introverted, performances. The reproduction is superbly clear, and I hope that many more such volumes will be forthcoming under the same auspices. The cause of Haydn’s keyboard music can only benefit.

—Igor Kipnis


HAYDN: Piano Sonatas: No. 8, in A Major (Hob. 5); No. 12, in A Major (Hob. 12); No. 14, in C Major (Hob. 3); No. 15, in E Major (Hob. 13); No. 28, in D Major; No. 29, in E-flat Major (Hob. 45); No. 37, in E Major (Hob. 22); No. 61, in D Major (Hob. 51); No. 62, in E-flat Major (Hob. 52). Variations in E-flat Major (Hob. XVII/3); Seven Minuets (Hob. IX/8, Nos. 1, 2, 5, 7, 9, 10, 11); The Seven Last Words of Christ. HAYDN (attrib.): Variations in D Major (Hob. XVII/7); SCHWANENBERG (formerly attrib. Haydn): Sonata in E-flat Major (Hob. 17). ANON. (formerly attrib. Haydn): Sonata in E-flat Major (Hob. 16). John McCabe (piano). LONDON STS 15428/31 four discs $19.92.

HAYDN: Piano Sonatas: No. 33, in C Minor (Hob. 20); No. 38, in F Major (Hob. 23); No. 54, in G Major (Hob. 40). Variations in E-flat Major (Hob. XVII/3). Gilbert Kalish (piano). NONESUCH H-71362 $4.96.
Viennese through and through, certainly had the Vienna Philharmonic sound in mind, and Christoph von Dohnányi is very much at home in this basically lush psychological idiom. It has taken Vienna many decades to own up to its own modern musical heritage, but apparently a real measure of acceptance has finally taken place.

The reason for this recording is undoubtedly the Lulu of Anja Silja, a very highly regarded singer in Europe but little-known here. Frankly, she has an ugly voice, but she is a fine musician and a major dramatic presence on the stage, and certainly a great deal of music-dramatic power comes through her singing on this recording. There is a strong supporting cast, too—Brigitte Fassbaender, Wal-


**Performance:** Impressive

Recording: Very good

Humphrey Searle’s fascinating notes for this recording of Liszt’s bravura transcription of the Symphonie Fantastique might lead one to expect too much from it. We are told, for example, that Sir Charles Halle recalled hearing Liszt himself play the fourth movement (the “March to the Scaffold”) directly after a complete orchestral performance conducted by Berlioz—and that the solo performance made the greater effect. Idil Biret gives a strong, knowing account of the work, but for me it in no wise surpasses, or even matches, an orchestral performance. Perhaps only Liszt himself could do that. Biret does, however, carry off at least one feat that Liszt said could not be done. At one point in the first movement Liszt added a third staff but noted that it "is not performable on the piano at the same time as the other two, but simply acts as an indication of the context of the original score." According to a note on the jacket, Bi-

**BRUCH: Concerto for Two Pianos and Orches-tra, Op. 88a; Fantasy for Two Pianos, Op. 11; Swedish Dances for Piano Duet, Op. 63. Martin Berkofsky, David Hagan (piano); Berlin Sym-

phony Orchestra, Lutz Esterberg cond. TURN-

ABOUT TV 34732 $4.98.**

**Performance:** Pianistically bright

Recording: Crisp pianos, dim orchestra

Max Bruch composed his two-piano concerto for Rose and Ottilie Sutro, who were active as a piano duo in the first quarter of this century. When the Sutro sisters received the manu-

script in 1915 and rehearsed the piece, Bruch, who conducted the rehearsals, was so dis-

tressed that he forbade them to perform the work outside the United States. In the two performances they did give, under Stokowski in Philadelphia and Stransky in New York, they played their own greatly simplified ver-

tion of the solo parts. And then the score simply disappeared—until pianist Nathan Twin-

ing came across it in a grab-bag purchase he made at a Baltimore auction of Sutro family effects in 1971. He and Martin Berkofsky managed to reassemble Bruch’s original ver-

sion from various sources for their own use, and they recorded it in 1973 with Antal Dorati and the London Symphony Orchestra (Angel S-36997). Shortly after that Berkofsky and Twin-

ing parted company, and there were some involved proceedings to determine who had the right to perform the concerto. A few years ago Berkofsky undertook performances with Justin Blasdale, and in October 1977 he gave the European premiere of the work with David Hagan in Hamburg; later that month he and Hagan taped this second recording of the concerto in Berlin.

There has been, then, much ado about this rediscovered concerto, heralded on the Turn-

about liner as “A Masterpiece Restored.” Even in this age of “good, better, great,” that’s a bit of an overstatement on behalf of an amiable but not especially memorable work whose dramatic gestures carry little conviction. Berkofsky and Hagan bring as much conviction to the performance, how-

ever, as Berkofsky and Twining did earlier, and their pianos benefit from crisper sound on Turnabout—but at the expense of orchestral

"(Continued on page 136)

**NATIONAL PUBLIC RADIO is proud to present the first nationwide broadcast of a series of concerts by THE INDIANAPOLIS SYMPHONY ORCHESTRA.**

Under the leadership of Music Director John Nelson, the concerts, recorded live in performance during the 1978-79 season, will feature such outstanding guest artists as:

Mario Bernardi, conductor

John Browning, pianist

Kyung-Wha Chung, violinist

Dylana Jenson, violinist

Joseph Kalichstein, pianist

Ruth Laredo, pianist

Alicia de Larrocha, pianist

Douglas Lawrence, baritone

Seth McCoy, tenor

Yo-Yo Ma, cellist

Jorge Mester, conductor

Arkady Orlovsky, cellist

Paula Robison, flutist

Max Rudolf, conductor

Paul Schenly, pianist

Benita Valente, soprano

The thirteen-week series begins in October on National Public Radio.

Check your local public radio station for time and listing.

**Indianapolis Symphony Orchestra**
Presenting Sharp's solenoid deck that plays selections according to your musical appetite.

If you hunger for one of the world's most advanced tape decks, then Sharp's RT-2251 is for you. The RT-2251 teams the genius of the Sharp Eye™ with the convenience of solenoid controls. A combination you won't find on any other deck.

The Sharp Eye gives you individual song selection. It plays only what you want to hear. And skips what you don't.

And the solenoid controls give you feather touch finger-tip control. For faster response and greater accuracy of all tape functions.

If once isn't enough when one of your favorites finishes, tell the Sharp Eye to play it again. And it will. Automatically.

You even have the option to change your mind. The Sharp Eye lets you interrupt one song and go on to the next. Instantly.

How do we do it? Simple. The Sharp Eye scans the tape at high speed, finds the blank spaces between selections and automatically plays back the music of your choice. To skip a selection it operates in fast forward. And for repeats, it works in reverse.

You'll also like the gourmet specs Sharp's cooked up for you. The RT-2251 serves up 0.055% wow and flutter, a S/N ratio of 66dB (Dolby® on, over 5kHz) and a frequency response of 30-17,000Hz (FeCr).

To get a real taste of our RT-2251, see the Sharp audio dealer nearest you or write Sharp Electronics Corporation, Dept. SR, 10 Keystone Place, Paramus, N.J. 07652.

* Dolby is a registered trademark of Dolby Laboratories.
DEBUSSY: La Mer; Nocturnes. Choëur de l’Orchestre de Paris (in Nocturnes); Orchestre de Paris, Daniel Barenboim cond. Deutsche Grammophon 2531 056 $8.98. © 3301 056 $8.98.

Performance: Voluptuous
Recording: Very good

DEBUSSY: Nocturnes; Ibéria; Jeux. Cleveland Orchestra Chorus (in Nocturnes); Cleveland Orchestra, Lorin Maazel cond. London CS 7128 $8.98.

Performance: Detached
Recording: Very good

RECORDING OF SPECIAL MERIT

DEBUSSY: Images pour Orchestre; Danse Sacrée et Danse Profane. Karel Patras (harp, in Danses); Czech Philharmonic Orchestra, Serge Baudo cond. Supraphon 4 10 2429 $8.98 (from Qualiton Records, Ltd., 39-28 Crescent Street, Long Island City, N.Y. 11101).

Performance: Stunnning
Recording: Excellent

RECORDING OF SPECIAL MERIT

DEBUSSY: Images pour Orchestre; Danse Sacrée et Danse Profane. Vera Badings (harp, in Danses); Amsterdam Concertgebouw Orchestra, Bernard Haitink cond. Philips 9500 509 $8.98. © 7300 669 $8.98.

Performance: Evocative
Recording: First-rate

Daniel Barenboim’s Debussy is exceptionally voluptuous, and his orchestra is in great form. The middle movement of La Mer and the two outer Nocturnes come off most impressively, but I felt a certain lack of momentum elsewhere, and Deutsche Grammophon has not provided the sonic sumptuousness I would have expected (though the recording is certainly a very good one, with fine definition). In common with Toscanini, Martinon, Boulez, and Ormandy, Barenboim does not include the trumpet part in the final section of La Mer (heard in the Ansermet, Karajan, Monteux, and Reiner versions). For the same coupling, I feel Ormandy (in Columbia MG 30950) or Martinon (Angel S-37067) will wear better.

Lorin Maazel’s record is a classic illustration of the principle “More is Less.” It astounds me that a major company, having made the investment necessary to record a major conductor and orchestra in this music, would give us one of those frustrating “sandwiches” in which a twenty-minute work is interrupted for turnover. In this case the sandwich is Ibéria, and, aside from having its own mood broken, who wants to hear its exuberant opening burst in on the dying-away of Sirenes? The performances struck me as very efficient and somewhat detached rather than in any way compelling. The sound itself is quite good, but the disc I received is marred by one of those invisible pressing flaws that cause a thud with each revolution.

Another sort of frustration, but a far happier one, comes with the two last discs, which duplicate each other’s repertoire but are both so outstandingly attractive that I wouldn’t want to do without either. Both accounts of

(Continued on page 138)
IMPROVE YOUR STATION IN LIFE.

AKAI's new receiver line features more power, better specs and new styling.

When it comes to getting the highest fidelity out of a system, the real heart of the matter lies in your receiver. And when it's time to make an improvement, AKAI offers four brand-new models that are designed to do your heart good.

It's our "AA" series. A line loaded with state-of-the-art features like DC amplification, instant response LED power indicators, and the kind of pure, clean power it takes for clear, brilliant sound.

Our AA-R50, for instance, offers 62 watts per channel minimum RMS at 8 ohms from 20-20,000 Hz. And with no more than .04% THD.

But we didn't stop there. You'll also find separate controls for bass, midrange and treble, as well as tape dubbing; easy-reading illuminated signal strength and tuning meters, high and low filters and FM Dolby® de-emphasis.

Of course, the other three members of this handsome new AKAI family share many of the same features, in a variety of power ranges to fit your requirements, and at prices that won't break your heart.

Have a listen at your AKAI dealer, or write AKAI, P.O. Box 6010, Compton, CA 90224; in Canada, AKAI AUDIO VIDEO CANADA, 2776 East Broadway, Vancouver, B.C., Canada V5M 1Y8.

AKAI. A full line of quality sound equipment that's especially well-received.

**Dolby Labs, Inc.

AKAI

You never heard it so good.
A GREAT UNDERSTATEMENT
BY JOCKEY

THE DENIM LOOK
This classic is also a great-looking, great-feeling line of underwear. Color coordinated briefs and shirts with accent trims. 50% Kodel polyester/50% combed cotton for easy care.

JDckey International, Inc., Menasha, Wisconsin 53140

STEREO REVIEW
mony or natural order of the universe—since the late middle ages. London's St. Cecilia Society was founded in 1683, and the production of Cecilian Odes was a favorite occupation of the day. Probably the greatest of these, Dryden's Ode for St. Cecilia's Day, written in 1687, was still well known fifty-two years later when Handel set it to music. Handel was influenced by English texts to break out of some of the more oppressive formal continental traditions, and Dryden's remarkably powerful lines on music elicited some of the composer's most ingenious work. The Ode is charming, witty, evocative, inspirational, without any sacrifice of expressiveness.

Handel has always been relatively neglected in the German-speaking world, and the Handelian performing tradition has been almost exclusively English. Nikolaus Harnoncourt is doing his best to change this situation. For this recording he brought his own excellent old-instrument group from Vienna, a chorus from Stockholm, and English soloists to Hamburg, that old North German merchant's town and most Handelian of German cities (the composer worked there from 1703 to 1706). While this recording does not exhibit some of the more extreme performance practices of Harnoncourt's recent version of the <i>Water Music</i>, it has plenty of character. I feel that, with some popular music, most of what people actually did in eighteenth-century performance is not even hinted at in the scores. Except for the suggestions in a few surviving manuals, there is little historical evidence to go on, so there is no assurance at all that Harnoncourt's approach is "right."

But whatever he does is alive and expressive and always worth listening to—nowhere more so than here. E.S.
Swiss-born composer's non-Hebraic works. In its very different way, Neville Marriner's reading of the latter is the first I would consider a worthy successor to the Kubelik/Chicago Symphony recording I had the honor of producing for Mercury 'way back in the spring of 1951. Marriner's tempos are swift and the textures are lean without seeming too thin. The balance between the string body and the obligato piano is excellent.

The Frank Martin piece involves a fascinating interplay of sonorities and textures between the harp-harpsichord-piano soloists and the Bartókian double-string-orchestra layout, as well as a quite successful attempt to move twelve-tone writing away from the doctrinaire methods of the Viennese School and more into the musical mainstream of the mid-Forties. The end result, cast in a sonata da chiesa (slow-fast-slow-fast) mold, is highly eclectic—rather like twelve-tone Ravel, if you can imagine such a thing—but no less entertaining for that. The most impressive music is the passacaglia episode that comes midway in the first movement. Marriner brings to the music just the combination of elegance and verve it needs. The recording is appropriately transparent and vital in sound. Most highly recommended. —David Hall

BLOCH: Concerto Grosso No. 1, Francis Grier (piano); Academy of St. Martin-in-the-Fields, Neville Marriner cond. M.B.N.: Petit Symphonie Concertante. Osian Ellis (harp); Simon Preston (harpsichord); Philip Ledger (piano); Academy of St. Martin-in-the-Fields, Neville Marriner cond. ANGEL S-37577 $7.98.

LEHAR: The Merry Widow (highlights). Joan Sutherland (soprano); Anna Glawari; Werner Krenn (tenor); Count Danilo Danilovitch; Valerie Masterspohn (soprano); Valencienne; John Brecknock (tenor); Camille de Rosillion; Werner Krenn. LONDON 10004 $9.98.

RECORDINGS OF SPECIAL MERIT

MAHLER: Symphony No. 4, in G Major. Barbara Hendricks (soprano); Israel Philharmonic Orchestra. Zubin Mehta cond. LONDON 3 LDR 10004 $9.98.

Performance: Good to excellent

Recording: A joy to the ear


Performance: Elegant

Recording: The very best!

As I have indicated in past reviews, the pleasure I take in records derived from digital tapes is less in what this technological advance does for the "blockbuster" aspect of sound recording than in what it does for fine details of timbre, nuance, and dynamics. Certainly such is the outstanding quality of the first London digital recordings to come my way.

Never have I heard so clearly and so justly the fine points of Mahler's orchestral coloration, particularly in the first and last movements. The Szell/Cleveland performance remains my favorite Mahler Fourth musically, but the elimination of tape hiss and a flawless pressing help make London's new one the best-sounding recording of the work. Zubin Mehta's performance is sure-handed, with no grandstanding even in the blazing outburst to which the end of the slow movement is so like a more rhythmic pulse in the second movement, with its spooky violin solo; Szell's somewhat faster tempo gives him an edge here. Mehta emulates Szell's slow, controlled

(Continued on page 144)
LIMITED SUPER-FI EDITIONS

Flash!  Five Titles Now Out Of Print!!  Last Chance!  Inventory Nearly Depleted!!!  No More Pressings To Be Made!!!

STEELY DAN
“Katy Lied”

THE MYSTIC MOODS ORCHESTRA
“Emotions” & “Cosmic Force”

ZUBIN MEHTA & LAPO
“Star Wars” &
“Close Encounters”

THE CRUSADERS
“Chain Reaction”

Rush to your MFSL Dealer now before it is too late!!!!!
Pacing of the adagio, which is all to the good. But the best part of this reading is the delectable finale, with its soprano solo sung with great sweetness by Barbara Hendricks. I regret, though, that London did not see fit to include the text.

London’s Mendelssohn disc, processed from a digital master tape, has turned out even better than its Mahler Fourth, thanks to the acoustic superiority of Vienna’s Sofiensaal over Tel Aviv’s somewhat harder and more brilliant Mann Auditorium. And the playing of the Vienna Philharmonic certainly has something to do with it as well.

What was most striking to me when listening to the disc was the sense of depth perspective between the various instrumental bodies of the orchestra – violins, cellos, woodwinds, brass, and timpani. Mendelssohn’s scoring is just the kind to bring this to the fore, far better as a sonic demonstration than the blockbuster repertoire usually adopted to tout new audio technology. An instance that struck me particularly was the lyrical entrance of the cellos in The Hebrides. The timpani perspective in Calm Sea and Prosperous Voyage is the nearest this disc comes to grand display, but it is not a matter of mere noise but of rightness and sound quality. The same quality of rightness and felicity of detail in the horn and trumpet overtures is extraordinarily impressive in both the overtures.

The Italian Symphony, with its wealth of interwoven textures through the first and last movement development episodes, is another fine vehicle for demonstrating what digital-master tape processing has to offer when combined with painstaking digital mastering, plating, and processing. I was struck again by the impressive sense of acoustic perspective that emerged in the horn calls midway in the third movement. Though the omission of the first-movement repeat in the symphony deprives us of some detectable transition material, Christoph von Dohnanyi has given a performance that is otherwise musically impeccable. Everything is poised, elegant, and infused with Romantic warmth. The opening movement is taken at a moderate but not too slow pace, and the two middle movements show the Vienna players off to perfection in terms of subtlety of tonal light and shade. In the finale, Dohnányi does go all-out for a brilliant result, and, possibly because he has held his fire until then, the aural visceral impact is that much more effective. Altogether, a lovely Mendelssohainian travelogue.

MOZART: Piano Concerto No. 11, in F Major (K. 413); Piano Concerto No. 20, in D Minor (K. 466). Murray Perahia (piano); English Chamber Orchestra, Murray Perahia cond. Columbia M 35134 $7.98, © MT 35134 $7.98.

Performance: Half good Recording: Good

This third volume of Murray Perahia’s Mozart concerto series continues the odd pattern set up by its predecessors; that is, one side thoroughly delights the ear and the spirit, and the other fails to meet expectations. Perahia’s elegant and precise pianism is perfect for K. 413, a lightweight piece from Mozart’s first years in Vienna as a “free artist.” Everything is gossamer light and innocent from start to finish, reaching an acme of delight in the minuet-finale with its fade-out end. The well-sea-

IZED RECORDING OF SPECIAL MERIT

PISTON: Concerto for String Quartet, Wind Instruments, and Percussion (see Kous- Sevitsky)

RECORDING OF SPECIAL MERIT

PURCELL: Music for Don Quixote. Judith Nelson, Emma Kirby (sopranos); James Bowman (countertenor); Martyn Hill (tenor); David Thomas (bass); Academy of Ancient Music. Christopher Hogwood cond. L’Oiseau-Lyre DSLO 534 $7.98.

Performance: Almost too beautiful Recording: Very good

I think I’ve finally figured out what happened to English music after Purcell. It was a victim
Super-Dome™ tweeter to match a high performance speaker system.

The Super-Dome™ tweeter in the new generation of Interface speakers represents an extraordinary development in speaker design. Electro-Voice engineers have developed the first high-performance tweeter capable of matching the high efficiency and extended bass response found in our optimally vented, computer designed Interface:A. Super-Dome has the sonic excellence normally associated with a dome tweeter and the efficiency heretofore found only in cone tweeters—two to four times that found in a standard dome. Plus, its voice coil will withstand a full 25 watts power input long term. That's five times the power handling capacity of other standard dome or cone tweeters.

While the angle of dispersion narrows at high frequencies with conventional tweeters, the high-density Acoustifoam™ lens in Super-Dome helps keep dispersion constant in the upper octaves. Acoustically transparent at lower tweeter frequencies, the lens becomes opaque at higher frequencies, reducing the effective diameter of the radiating surface, thus increasing the angle of dispersion.

The result is the wide, uniform high-frequency dispersion necessary for precise localization of sound, both lateral and front-to-back. Super-Dome is found in six of seven speakers in the new third-generation Interface line. No matter which model you decide to buy, you are assured of outstanding performance and model-to-model sonic integrity. Our goal remains the same as it was in 1973 when we introduced the first Interface speaker—to offer you a speaker that sounds like music.

Interface:A Series III
of class warfare. No kidding. In Restoration days, as in Elizabethan times, music was an integral part of theater, and both had strong popular elements. Later, when Italian opera and Handel came along, a serious split developed between the "class" act (opera, fancy singing, a snobby sound) and popular entertainments (music hall, pantomime, etc.). Since the theater was always the incubator of new talents and styles, gifted young composers were relegated to writing choral anthems for the Church of England, with the well-known consequences.

Listen to the vividly popular and dramatic style of the music that Purcell contributed to three Don Quixote plays by the irrepressible Tom D'Urfe, a kind of seventeenth-century Max Reinhardt. (The last number recorded here, Altisidora's Mad Scene, is said to be the last thing Purcell ever wrote.) This record offers beautiful and effective performances using ancient instruments. Even so, I question why—since the instrumental sound is so vivid—no one has attempted to re-create a more realistic singing and verbal sound. Actually, one of the singers, David Thomas, has some of the qualities—melodiousness, humor, popular style, vigor, verbal clarity—that all of the singers must have had then. There have been reconstructions of Shakespearean English; why not of the Purcellian rough-and-ready singing style before it was butchered by bel canto? But aside from some excessively "pure" and rather too beautiful singing, this is a sterling performance of some most enchanting and affecting music. The album is the third volume in L'Oiseau-Lyre's project of recording all of Purcell's incomparable theatrical music, so I advise you to check out volumes one and two as well.

J.C. Bach: Six Spirited Symphonies

Published in 1765, the six symphonies of Johann Christian Bach's Opus 3 reveal him to have been a pioneer of the Classical style. By that date Haydn had made a good start in forging the new musical language with his first twenty-five symphonies, and Mozart had chucked five.

The "London Bach's" first six, now recorded on a new Philips release, are equal in stature to, if not better than, those early efforts of his more famous contemporaries. The Classical gesture is fully developed in them, the music vigorous, full of contrast, and brilliantly orchestrated, the essence of wit and elegance. The hushed lyricism of the slow movements is particularly remarkable, with the serenity of the new galant style of melody. Whoever said that J. C. Bach was "Mozart without a soul" should be shot; Mozart would have been the last to agree.

Neville Marriner's reading of these spirited works, with the Academy of St. Martin-in-the-Fields, is superb. All the clarity of textures, exquisitely molded phrases, rhythmic control, and beautiful sound that we have come to expect of the Academy's performances are present here, only more so. Both Philips and Marriner have outdone themselves with this release. —Stoddard Lincoln

J. C. BACH: Symphonies, Op. 3, Nos. 1-6
Simon Preston (harpsichord); Academy of St. Martin-in-the-Fields, Neville Marriner cond. Philips 9502 001 $8.98, © 7313 001 $8.98.

ROSENBOOM: And Out Come the Night Ears; How Much Better If Plymouth Rock Had Landed on the Pilgrims, Section V
David Rosennboom (piano, synthesizer); Donald Buchla (synthesizers). 1750 ARCH S-1774 $7.98.

Performance: Starling
Recording: Excellent

Donald Buchla is not only one of the pioneer builders of synthesizers, he has also become an active participant in the creation and reproduction of electronic music. His specialty is the use of synthesizers as live instruments (before Buchla, most synthesizers were bulky and useless for only studio work). Here he collaborates with composer David Rosenboom in two major performance pieces recorded live at a galaxy-recording session. And Out Come the Night Ears, by far the more catchy of the two works, is a big, tense, sloppy, nervous, improvisational piano piece whose invigorating sounds are produced through a kind of electronic de-washing machine that puts the grit back in the sound. How Much Better etc., is a partly improvised electronic duet for Rosenboom and Buchla in the fashionable pretty-pattern pulse-music style, is charming if not very consequential.

RAVEL: Boléro (see Best of the Month, page 91)
Susan Strother (cello); Donald Buchla (piano, synthesizer). Philips 8527 001 $4.96.

Recording: Good
Performance: Eminently satisfying

This is an interesting and thoroughly enjoyable program embracing a considerable portion of Schumann's vocal duets and four of the nine songs that make up the Wilhelm Meister collection (Op. 98a). Some of the duets are topnotch Schumann and not easy to come by on records, though five of those listed here are performed by Janet Baker and Dietrich Fischer-Dieskau on Angel S-36712.

Jan DeGaetani is one of the most satisfying vocalists on records today. She sings Schumann with the same unmannered naturalness and absolute tonal security she brought to her interpretations of Schubert, Wolf, Ives, and Stephen Foster. Leslie Guinn, though a bit self-effacing, is her worthy partner. Together they range through the changing moods of these duets—from exuberant dances through ardent love vows to mellow contemplation—with unfailing responsiveness and musicality. Even when the tempo choices are questionable (such as the breakneck pace in Die Tausend Grisäe), they manage the music with uncanny precision.

What keeps me from registering unreserved enthusiasm is the recording balance. It is true that Schumann's piano writing is noteworthy and demanding. It is also true that Gilbert Kalish, an extraordinary pianist, is a valued collaborator who is always equal to his task. But it is not right to reward his accomplishment by according him equal presence with the singers. These are duets with piano accompaniments, not trios, which is what they sound like here. Such a distorted perspective is particularly damaging to the baritone, whose vocal projection is, in any case, not forward enough. But both singers suffer: their diction, though excellent, is still not that of native German speakers, so they need all the clarity and prominence they can get. That reservation aside, the album is an admirable achievement enhanced by smooth technical processing, complete texts, and good translations and annotations.

Johann Christian Bach's Opus 3 reveal him to have been a pioneer of the Classical style. By that date Haydn had made a good start in forging the new musical language with his first twenty-five symphonies, and Mozart had chucked five.

The "London Bach's" first six, now recorded on a new Philips release, are equal in stature to, if not better than, those early efforts of his more famous contemporaries. The Classical gesture is fully developed in them, the music vigorous, full of contrast, and brilliantly orchestrated, the essence of wit and elegance. The hushed lyricism of the slow movements is particularly remarkable, with the serenity of the new galant style of melody. Whoever said that J. C. Bach was "Mozart without a soul" should be shot; Mozart would have been the last to agree.

Neville Marriner's reading of these spirited works, with the Academy of St. Martin-in-the-Fields, is superb. All the clarity of textures, exquisitely molded phrases, rhythmic control, and beautiful sound that we have come to expect of the Academy's performances are present here, only more so. Both Philips and Marriner have outdone themselves with this release. —Stoddard Lincoln

J. C. BACH: Symphonies, Op. 3, Nos. 1-6
Simon Preston (harpsichord); Academy of St. Martin-in-the-Fields, Neville Marriner cond. Philips 9502 001 $8.98, © 7313 001 $8.98.

ROSENBOOM: And Out Come the Night Ears; How Much Better If Plymouth Rock Had Landed on the Pilgrims, Section V
David Rosennboom (piano, synthesizer); Donald Buchla (synthesizers). 1750 ARCH S-1774 $7.98.

Performance: Starling
Recording: Excellent

Donald Buchla is not only one of the pioneer builders of synthesizers, he has also become an active participant in the creation and reproduction of electronic music. His specialty is the use of synthesizers as live instruments (before Buchla, most synthesizers were bulky and useful only for studio work). Here he collaborates with composer David Rosenboom in two major performance pieces recorded live at a galaxy-recording session. And Out Come the Night Ears, by far the more catchy of the two works, is a big, tense, sloppy, nervous, improvisational piano piece whose invigorating sounds are produced through a kind of electronic de-washing machine that puts the grit back in the sound. How Much Better etc., is a partly improvised electronic duet for Rosenboom and Buchla in the fashionable pretty-pattern pulse-music style, is charming if not very consequential.

RAVEL: Boléro (see Best of the Month, page 91)
Susan Strother (cello); Donald Buchla (piano, synthesizer). Philips 8527 001 $4.96.

Recording: Good
Performance: Eminently satisfying

This is an interesting and thoroughly enjoyable program embracing a considerable portion of Schumann's vocal duets and four of the nine songs that make up the Wilhelm Meister collection (Op. 98a). Some of the duets are topnotch Schumann and not easy to come by on records, though five of those listed here are performed by Janet Baker and Dietrich Fischer-Dieskau on Angel S-36712.

Jan DeGaetani is one of the most satisfying vocalists on records today. She sings Schumann with the same unmannered naturalness and absolute tonal security she brought to her interpretations of Schubert, Wolf, Ives, and Stephen Foster. Leslie Guinn, though a bit self-effacing, is her worthy partner. Together they range through the changing moods of these duets—from exuberant dances through ardent love vows to mellow contemplation—with unfailing responsiveness and musicality. Even when the tempo choices are questionable (such as the breakneck pace in Die Tausend Grisäe), they manage the music with uncanny precision.

What keeps me from registering unreserved enthusiasm is the recording balance. It is true that Schumann's piano writing is noteworthy and demanding. It is also true that Gilbert Kalish, an extraordinary pianist, is a valued collaborator who is always equal to his task. But it is not right to reward his accomplishment by according him equal presence with the singers. These are duets with piano accompaniments, not trios, which is what they sound like here. Such a distorted perspective is particularly damaging to the baritone, whose vocal projection is, in any case, not forward enough. But both singers suffer: their diction, though excellent, is still not that of native German speakers, so they need all the clarity and prominence they can get. That reservation aside, the album is an admirable achievement enhanced by smooth technical processing, complete texts, and good translations and annotations.

J.G.
in the sonata, a delicate balance that realizes the music's full intensity without tumbling over into hypertense excess. Other pianists may have evoked an arier sense of mystery and poetry in some of the Fantasiestücke, but Starr's straightforward, extremely well-balanced statement of the familiar sequence wears very well. Her view of the cycle is one of artful simplicity, which strikes me as just what Schumann had in mind. The sound is warm and realistic, and the layout conveniently gives each work a side to itself. In short, anyone attracted by this particular combination of titles should find this recording a very safe investment.

K.F.

SHOSTAKOVICH: Festive Overture, Op. 96 (see Best of the Month, page 91); Lady Macbeth of Mtsensk (see Best of the Month, page 93)

RECORDING OF SPECIAL MERIT

Performance: Very fine Recording: Very good
The composer's son Maksim Shostakovich gave the world première of this symphony and conducted the first recording (on Melodiya/ Angel). His is a hard act to follow, but Bernard Haitink's new reading differs markedly in approach. There is less raw drama here and considerably more emphasis on lyrical elements, both in interpretation and in the style of orchestral playing—even in the recording. The sound on that first recording is raw, almost to the point of harshness, and the very large recording space emphasized this; the British playing is elegant to a turn—not precious, mind you—and so is the recorded sound, except for somewhat too much timpani presence from time to time.

This recorded performance illuminates other facets of the score than those we have come to know. It is a tribute to Shostakovich's genius that his work can undergo varied readings. When these are well considered, as this new one is, the music retains its integrity and becomes richer in the process.
D.H.

SINDING: Piano Concerto in D-flat Major, Op. 6 (see STAVENHAGEN)


Performance: Pianist strong Recording: Very good
We must here be more Romantic-revival monsters, post-Wagnerian piano concertos by two talented but minor luminaries of the late nineteenth century. Christian Sinding is generally remembered for a single piece of music, Rustle of Spring, an item that ranks very high on any all-time kitsch hit list. His pompous concerto tries to rival that of his countryman Grieg by combining Lisztian heroics with touches of folk. There is much more of interest in the concerto of Bernhard Stavenhagen, a Liszt pupil and once a well-known conductor. This appealing work, composed in the glow of Bayreuth and Weimar, is ingenious in its structure; the slow movement comes after the first-movement development, and the finale is the recapitulation. The craftsmanship is on the highest level; the invention and imagination never flag, the formal continuity only slightly. Roland Keller is a strong but not overwhelmingly impressive interpreter, and the orchestra is adequate. Good stereo.

K.F.

TIPPETT: Choral Music. Dance, Clarion Air; The Source; The Windhover; Lullaby; Bonny at Morn; Four Songs from the British Isles; Magnificat; Nunc Dimittis; Flehs Angelica; The Weeping Babe; Music; Five Negro Spirituals. School of Cantorium of Oxford; John Turner, David Pugsley, Alan Lumsden (recorders); Stephen Cleobury (organ, piano); Nicholas Cleobury cond. L'OEISEAU-LYRE DSLO 25 $8.98.

Performance: Committed Recording: Perfectly adequate
Sir Michael Tippett himself wrote the brief but informative annotation for this collection of his choral pieces, which he groups under four general headings: pieces for unaccompanied voices, the first four in the listing above; liturgical pieces; "unassuming 'pieces for the occasion'"; and popular songs for unaccompanied choir. Included in the last category are the five Negro spirituals Tippett used in his oratorio A Child of Our Time, composed in 1939-1940; these rearrangements, from 1958, do not strike me as being especially successful, having neither the impact of the symbolic settings in the oratorio nor the authenticity of the simple versions American listeners are accustomed to hearing. But they are not entirely without interest, and the set is only eleven minutes' worth of a full hour of otherwise intriguing material, most of it new to the U.S. catalog. The settings are as imaginative and varied as the respective texts—by Yeats, Christopher Fry, Shelley, Gerard Manley Hopkins, et al.—might suggest. Those of Yeats' Lullaby, composed for the Deller Consort in 1960, and of the Scottish folk song Poontind Ceard are especially touching—and deceptively simple-sounding—while the Irish Lilliburlero makes, as the composer suggests, "a rollicking and vigorous scherzo."

Nicholas Cleobury gets very sensitive, committed singing from his young chorus. These are performances to gladden a composer's heart, I would think, and the listener curious about this segment of Tippett's output can only be grateful for the opportunity to investigate so much of it in so attractive a presentation.
K.F.

RECORDING OF SPECIAL MERIT

WAGNER: Twilight of the Gods: Act III, Scenes 2 and 3. Rita Hunter (soprano), Brunnhilde; Alberto Remedios (tenor), Siegfried; Clifford Grant (bass), Hagen; Norman Bailey (baritone), Gunther; Margaret Cur- obey (soprano), Gutrune. Sadler's Wells Opera Chorus and Orchestra, Reginald Goodall cond. UNICORN UN2-75020X two discs $11.98.
Performance: Very good Recording: Excellent
This set, released in England in 1973, was the first recorded documentation of Sadler's Wells' (now called the English National Opera) much-praised English-language Ring cy-

---

DON'T CALL

unles you want the best professional advice on your next home, car or boat stereo purchase.

- Wide variety of brands available, representatives of finest components.
- Factory sealed cartons with full manufacturers warranty.
- Fast shipments, fully insured.
- Expert advice on all stereo purchases.
- AND our prices are most competitive.

Our trained staff will help you select the right stereo products for your needs and budget. It's worth the call.

CALL 1-800-TOLL 632-5860

Our Prices Beat Others. We'll Beat Anyone's Price Guaranteed. Dulles Airport Supermarket

CIRCLE NO. 7 ON READER SERVICE CARD

---

Your National Headquarters for Name Brand Electronics by Mail

★ Full Manufacturer Guarantee Applies to All Sales!!
★ Orders Shipped in Factory-Sealed Cartons—Most Within 24 Hours
★ Multi-Million $$$ Inventory

TOP DISCOUNT AUDIO

1150 N. Powis Rd., West Chicago, IL 60185
SR-10 TOLL FREE 800-323-251B
MasterCharge and VISA Welcome
Call or Write for the LOWEST PRICES Around!

TOP DISCOUNT AUDIO

1150 N. Powis Rd., West Chicago, IL 60185
SR-10 TOLL FREE 800-323-251B
MasterCharge and VISA Welcome
Call or Write for the LOWEST PRICES Around!

TOP DISCOUNT AUDIO

1150 N. Powis Rd., West Chicago, IL 60185
SR-10 TOLL FREE 800-323-251B
MasterCharge and VISA Welcome
Call or Write for the LOWEST PRICES Around!

TOP DISCOUNT AUDIO

1150 N. Powis Rd., West Chicago, IL 60185
SR-10 TOLL FREE 800-323-251B
MasterCharge and VISA Welcome
Call or Write for the LOWEST PRICES Around!

TOP DISCOUNT AUDIO

CIRCLE NO. 76 ON READER SERVICE CARD
The Complete Webern: Defining the End of an Era

COLUMBIA's new four-disc set of the complete music of Anton Webern recorded under the direction of Pierre Boulez is labeled "Volume 1." It contains Opp. 1-31, everything from the Passacaglia for Orchestra to the Second Cantata, so what more can there be? Well, there are some early works preceding the official Opus 1, as well as a few unfinished and unpublished works of the composer's maturity (the new album has an elaborate program note on one of these even though the music is not included). Classical composers dead for two hundred years have not had their musical bones picked over as lovingly as Webern's. Even as this set appears, an 800-page biographical study has been published—an astonishing tribute to a composer whose entire output is shorter than a single opera of Wagner.

Make no mistake: Opp. 1-31 are the essential Webern, the works that changed the face of modern music. When Robert Craft first recorded them complete for Columbia in 1957 he was ahead of his time; these rerecordings virtually define the end of an era.

The era is, of course, that of Webernism. During his lifetime Webern always took third place, after Schoenberg and Berg, in the original twelve-tone triumvirate. He was the oddball, a rather scholarly radical whose music was abstract almost to the vanishing point. Webern is best known as a miniaturist (and he certainly was that, although there are really only a few, relatively early works of truly miniscule dimensions), but what is more important is that he carried the notion of pure abstraction in music (which Schoenberg seems to have invented) to its highest peak. It was Webern's thoroughgoing purity of style and form that appealed to young composers after World War II and which—with the unexpected blessing of Igor Stravinsky—made him the official father of the New Music.

When Craft recorded these works in Hollywood in the Fifties, the music was still new and highly challenging. Certainly it strained the capacities of some very fine studio musicians, particularly in the driblets of left-over studio time Craft was able to scrounge from Stravinsky sessions. That set was a hobo-style trip through the Webern repertoire; the new one is luxury-class all the way. It is a measure of how far we have come that some superstars as Isaac Stern and Gregor Piatigorsky were willing to make what can only be called "cameo" appearances (in Opp. 7 and 11, respectively)—and, more, that this expressionist music fits so perfectly into their regular line of Romantic music-making. But the outstanding instrumentalist here is certainly Charles Rosen, who plays all of the piano music, including the song accompaniments and the ensemble chamber works, and is practically the assistant director of the project. Another heavy burden (lots of atonal songs) is well borne by the two sopranos—one English, one Polish, neither thrilling but both extremely musical. The excellent Julian Quartet, the excellent John Alldis Choir, the excellent London Symphony Orchestra, and the excellent Pierre Boulez pretty much complete the cast.

The new set also includes Webern's own orchestral version of his Five Movements for String Quartet, Op. 5 (in that form probably his most-played work), his gorgeously idiosyncratic orchestration of the six-part recercare from Bach's Musical Offering; and his orchestrations of a set of Schubert dances in a transcription from a 1932 German radio performance with Webern himself conducting. This last item gives a wonderful insight into the remarkably traditional and Romantic qualities of Webern the musician. In fact, Webern, the father of the avant-garde, always thought of himself as being right in the mainstream of the great Western European tradition. As "Webernism" recedes ever more distantly, an album like this seems only to confirm that truth.

—Eric Salzman

WEBERN: Complete Works, Volume 1 (Opp. 1-31), Heather Harper, Halina Lukomska (sopranos); Barry McDaniel (baritone); Gregor Piatigorsky (cello); Isaac Stern (violin); Charles Rosen (piano); John Allidis Choir; Julian Quartet; London Symphony Orchestra. Pierre Boulez cond. COLUMBIA M4 35193 four discs $31.98.

The complete Rheingold, The Valkyrie, and Siegfried were released subsequently, the first two in the United States as well. All use the Andrew Porter translation commissioned by Sadler's Wells in 1968. It is a truly singable translation that charts a sensible course between stilted archaism and colloquial anachronism. I cannot say that every word is clearly pronounced here; that would be asking the impossible in a Wagner opera, whatever the language. But using the text as a guide will permit the listener to become rewardingly involved in this, the most human drama of Wagner's great cycle.

The performance is absolutely first-rate. Reginald Goodall is a Wagnerian in the Furtwängler/Knappich tradition; in his hands the music unfolds at a leisurely pace, in a grandiose manner, moving steadily forward in mighty waves. No episodes are allowed to break the conductor's unifying concept, and the orchestra sounds like a major ensemble under his direction. It is this ensemble feeling that lends most distinction to the vocal contributions, but individually, too, the singers excel. Rita Hunter's powerful yet warm-sounding Brünnhilde is paired with the appealingly youthful and lyrical Siegfried of Alberto Remedios, for whom Wagner and legato are not incompatible. Clifford Grant impressively disposes of Hagen's high-lying phrases, and Margaret Curphey and Norman Bailey carry out their relatively small assignments with distinction.

This is an ideal set for beginning Wagnerians, but it should impress all but diehard traditionalists too. It is, furthermore, recorded with remarkable richness and clarity.

G.J.

WEINBERGER: Polka and Fugue from Schwannda (see Best of the Month, page 91)

WOELFL: Grand Duo in D Minor, Op. 31

BEETHOVEN: Sonata in F Major, Op. 17; Variations on a Theme of Mozart

WEINBERGER: Polka and Fugue from Schwannda

WOELFL: Grand Duo in D Minor, Op. 31

BEETHOVEN: Sonata in F Major, Op. 17; Variations on a Theme of Mozart

Wagner: Great cycle.

The performance is absolutely first-rate.

The music of Joseph Woelfl (1773-1812) reminds us that Beethoven was not the only composer to write in a "Beethovenian" style. In fact, Woelfl's Grand Duo of 1805, or at least its first movement, sounds more like Beethoven than that composer's own Op. 17 sonata written five years earlier for horn and piano (the cello was an option). As a pianist, Woelfl was considered at the time to rival Beethoven, and he had enough going for him as a composer to create a striking first movement—the second and third movements, in turn lyrical and jolly, are minor stuff. Woelfl's piece and Beethoven's sonata and well-known Mozart Variations (on "Bei Männern" from The Magic Flute) are all played here in an open, hearty, and good-humored manner. The performances can be recommended, but the recorded sound, unfortunately, is dull.

E.S.

COLLECTIONS

RECORDING OF SPECIAL MERIT

VICTORIA DE LOS ANGELES: Opera Arias

Verdi: Ernani; Ernani! Ernani involami. Otello: Willow Song; Ave Maria. Rossini: La (Continued on page 150)
**Select 3 Records or Cassettes FREE with any future purchase you elect to make.**

*Choose from artists such as André • De Larrocha • Oistrakh • Rampal • Gilels • Rostropovich and many, many more*

Just a sampling of the great artists available from our Master Catalogue of nearly 3000 recordings!

**Centuries of Great Music at Your Fingertips**

The Society's recordings span all periods of music ... Medieval, Gothic, Renaissance, Baroque, Rococo, Classical, Romantic, and Modern. We offer you a vast selection (nearly 3000 recordings) of works available nowhere else!

Among the exciting performances awaiting your listening pleasure are classical masterpieces by immortal composers—Mozart, Beethoven, the Bachs, Mendelssohn, Tchaikovsky, Handel and many, many more. Also available to members are works by composers who have become noteworthy due almost entirely to the Society's efforts—Pachelbel, Telemann, Fauch, Gilels ... Every Recording Available at Enormous Savings!

Your membership in the Musical Heritage Society offers you more immediately available recordings than any other single source!

This huge volume and our direct service (no middleman) entitle you to substantial savings on every record or cassette you purchase. Members' prices are only $3.95 for each 33 1/3 RPM disc and $4.95 for each Dolbyized cassette, plus postage and handling.

Enjoy the Finest Quality and Award Winning Performances

Nowhere else will you find a collection of such vast proportions or exacting quality of performance or manufacture. More than 200 of the Society's recordings have won the GRAND PRIX DU DISQUE and other international awards of excellence. Society recordings are selected by experts and supported by critics worldwide.

Reproduction standards are among the finest available. That's just one reason why so many of these recordings merit international awards. Another reason is sheer artistic excellence. You can build a library of these superior recordings—as a member of the Musical Heritage Society!

**Join the Society Now! Your Free No-Obligation Membership Includes ...**

- A free one-year subscription to Musical Heritage Review magazine. Issued every 3 weeks (18 times a year), this definitive publication contains the Society's latest releases along with over 1200 pages annually of news, reviews and colorful editorial coverage of great music from all periods.

- There is no purchase obligation and you may discontinue the complimentary subscription at any time. As a member, two (sometimes three) outstanding selections will be scheduled for shipment to you from each issue; but there is no obligation to accept them ... order only those you want when you want them!

- A special response form will be enclosed with each Review ... and you may use it to order or reject any selections simply by mailing it by the date specified. And if you want only the scheduled selections, you need do nothing—they will be shipped to you automatically.

What's more, you'll have at least ten full days in which to make your decision— if you ever have less time than that, just return the special selections at our expense, for full credit.

- Huge savings on every record ($3.95) and cassette ($4.95), plus postage and handling.

- Immediate availability from the largest selection of its kind.

- No waiting. Your order is shipped direct from our vault inventory.

- Convenient ordering with our Open Credit Account.

- Discount purchasing of the finest reproduction equipment and accessories.

- Full 30-day guarantee on every record or cassette purchased.

- A free copy of the giant Master Catalogue with your first purchase.

**Membership Application**

Receive 3 Records or Cassettes of Your Choice FREE With Any Purchase! Apply Now for Your Society Membership.

Mail this application to:

**Musical Heritage Society**

Dept. STR 003

14 Park Road

Tinton Falls, New Jersey 07724

**YES. I would like to become a member of the Musical Heritage Society.**

**NAME**

**ADDRESS**

**CITY**

**STATE**

**ZIP CODE**

**PLEASE PRINT CAREFULLY**

**YOUR SIGNATURE**

Enjoy the Many Society Benefits with No Purchase Obligation—Ever!

Performance: Superb
Recording: Adequate

A superficial chronicler of the Fifties, faced with the disproportionate attention the press paid to the Callas-Tebaldi rivalry, might assume that no other soprano was making operatic news in those days. Actually, that was also the period when Victoria de los Angeles went from one operatic triumph to another in her own self-assured but non-flamboyant way. She excelled in French opera (Marguerite, Manon, Melisande), as well as in Italian roles (Mimi, Butterfly, Desdemona). She was an exquisite Countess in Mozart's The Marriage of Figaro and sang Wagner in Bayreuth. She had few peers as a song recitalist and was one of the few interpreters of Spanish music. She had few peers as a song recitalist and was one of the few interpreters of Spanish music.

In 1955 she recorded a sequence of eight scenes from Italian opera, originally released by RCA, that captured her art at its zenith. The same recital is here reissued on Sera phim (with an altered sequence on side two).

Here's important information about the first FM tuner good enough to carry the Crown name.

FINE TUNING BY CROWN.

If you would like a full-size copy of the above ad, detailing the exciting new concepts now available in the Crown FM1 tuner, please check the number below on this magazine's reader service card and we'll send it to you. Otherwise, hurry directly to your Crown dealer for an unusual hands-on experience.

CROWN

1718 W. Mishawaka Road, Elkhart, Indiana 46514


CIRCLE NO. 16 ON READER SERVICE CARD

RECORDING OF SPECIAL MERIT


Performance: Elegant
Recording: Good

Here are three rarities, two of which are masterpieces. The most imposing is Michael Haydn's concerto, a work filled with all the charm and grace of the gallant style. Haydn here at once looks forward to the high Classical style of his older brother and back to the driving rhythms of the Baroque era. It is a spacious piece, unfolding at a leisurely pace, and offers its many rich ideas with a remarkably formal clarity. It will certainly whet one's appetite for more music by the brother whom the great Joseph has almost completely eclipsed.

The Telemann too is a top-drawer piece and deserves careful listening, especially the two slow movements with their unusual harmonies and delicate textures. Coincidentally, both these concertos are in B Major, a key rarely used in those days, perhaps that is why both composers took such care in employing it. In comparison, the concerto by Georg Johann Pisendel, a Bavarian contemporary of J. S. Bach, sounds rather ordinary. It does, however, make pleasant fare.

Jaap Schroder's performances are superb. The virtuosic violin parts are tossed off with playful ease, and the minute ornamentation is never forced into brilliance. Overall phrase structure is never lost in the detail of articulation in these beautifully poised performances. Although the jacket tells us nothing of the instruments used, the silvery tone of the solo violin and the mellow support of the Concerto Amsterdam could only be produced by early instruments.

S.L.


As before, it is a blissful combination of refined vocalism and aptness of characterization. De los Angeles' Desdemona has a tragic dignity, her Mimi a subdued pathos illuminated by a very special charm. Her delivery of the Boito aria isintroverted by the more passionate Muzio-Albanese standards, but the music's wide-ranging demands are easily encompassed. The florid requirements of Ernani and La Cenerentola are in no way slighted: her singing is accurate, effortless, and, again, dramatically appropriate. In the role of Santuzza she seems to project an upper-class image, but her "Voi lo sapete" does not lack passion. Throughout the entire recital, the connoisseur will cherish her purity of intonation, attentiveness to the texts, richness of vocal nuance, and rare blending of unaffected charm and innate musicality. The orchestral accompaniment is satisfactory, the recorded sound perfectly acceptable mono. G.J.

1718 W. Mishawaka Road, Elkhart, Indiana 46514

In recent years over 500,000 music lovers chose a Realistic® receiver over Kenwood®, Pioneer® and Technics®...

Why?

Perhaps it’s because Radio Shack is a retailer as well as a manufacturer. When the store is also the factory, you’re apt to get less fiction and more fact. Or perhaps it’s because Radio Shack has more company-owned and operated service stations than anyone we know of in the audio business (54 to be specific).

Could it be we sell so much Realistic because we’ve been around since 1921 — long before those other brands were even a twinkle in daddy’s eye? Although hi-fi is typically a young person’s product, maybe the kids prefer to bet their hard-earned bucks on the outfit with the grayest hair.

Then there’s this to consider: The same company that puts Realistic out front also builds and markets the world’s most popular personal computer. It seems to us that a company smart enough to design equipment as innovative and complex as the TRS-80® is a logical one to choose to build your stereo receiver!

Need another good reason to buy Realistic? Let’s take availability. Instead of tens or hundreds of places to find it, we offer over 7300 — wherever you go in the USA or Canada, and a surprising number of overseas locations as well. Being more available doesn’t necessarily make us more lovable. But it goes a long way towards assuring you of being able to get in touch with us when you need advice on adding a tape deck or replacing a lost instruction manual.

Incidentally, we’re not picking on Kenwood, Pioneer and Technics. The same half-million plus folks who chose Realistic also probably had a crack at buying Sansui, Marantz and Fisher. The important thing is... they didn’t!
Performance: Lively
Recording: Good

The four vigorous young members of Calliope (Lucy Bardó, Lawrence Benz, Allan Dean, and Ben Harms) play viols, sackbuts, cornets, trumpet, recorders, crumhorns, and percussion. The repertoire on their debut recording includes (the title notwithstanding) Franco-Flemish music of before 1500, charming mid-sixteenth-century dances written (or arranged) by Tielman Susato and some anonymous Italians, and a group of late-Renaissance Italian works, including one by Adriano Banchieri, two by Vincenzo Ruffo, and a sensational piece by Don Carlo Gesualdo. Most of this music has not been previously recorded, and, in fact, the enterprising members of this ensemble do a lot of their own transcribing from ancient manuscripts. They also do a lot of editing and arranging, topping it all off with skillful playing in a lively but authentic style. The proper description for their album is "most enjoyable." E.S.

CARLO CURLEY GOES DIGITAL (see Best of the Month, page 91)

DANZAS FANTÁSTICAS (see Best of the Month, page 91)


Performance: Lively
Recording: Fair

Taped on location at a Pasadena, California, recital on January 17, 1978, this is a varied, entertaining program by a winning pair of expert recitalists. Aside from being thoroughly familiar with their material, both artists are at ease, fully relaxed, and radiate a sense of fun evidently shared by their audience. In the songs, Evelyn Lear seems to be in better voice, evidently shared by their audience. In the songs, Evelyn Lear seems to be in better voice, apparently as a result of her recent recovery from surgery. She is still a bit too hammy for me.

Technically, however, this is not a very satisfactory release. The microphone placement is not always favorable to the singers, though it successfully highlights Martin Katz’s pianistic brilliance. There is a bad splice in Feinschleichen, and there are far too many surface clicks. Texts are provided for all the songs but the English ones—we could use those too.

G.J.
STEREO REVIEW MARKET PLACE

REGULAR CLASSIFIED: COMMERCIAL RATES: For firms or individuals offering commercial products or services, $2.80 per word. Minimum $42.00. EXPAND-AD* CLASSIFIED RATE: $4.20 per word. For individuals with a personal item to buy or sell, $1.60 per word. No minimum! DISPLAY CLASSIFIED: 1" by one col., $340.00. 2" by one col., $680.00. Col. width 2-1/4". Advertiser to supply film positives. Please write or phone for frequency rates. GENERAL INFORMATION: Ad copy must accompany payment and must not contain any copyrighted material. Payment must accompany copy except when ads are to be billed on credit cards — American Express, Diners Club, Master Charge, VISA (supply expiration date) — or when ads are placed by accredited advertising agencies. First word in all ads set in caps. All copy subject to publisher’s approval. All advertisers using P.O. Boxes in their addresses must supply publisher with permanent address. No private or rural route numbers can be run. Authorization must be obtained in advance. They will appear in the first issue on file to go to press after closing date. Closing Date: 5th of the 2nd month preceding cover date (for example, March issue closes January 5th).

To all Advertisers: Your addresses MUST supply publisher with permanent address and telephone number before ad can be run. Address changes are effective on the first issue after the order is received. Advertisers who wish to change their addresses will have their ad canceled and reprinted with the new address. This applies also to address corrections. Advertisers are responsible for providing correct mailing information. Advertisers who wish to change the address of the material they want to be sold must notify the publisher of this change. All requests for reprints or sales catalogs will be handled promptly. Send order and remittance to: Classified Advertising, STEREO REVIEW, One Park Avenue, New York, New York 10016. For inquiries contact: Linda Lemberg at (212) 725-3924.


SAVE 50%. Build your own speaker system: Write, McGee Radio Electronics, 1951 McGee Street, Kansas City, Missouri 64108.

LOWEST PRICES. BSE, SAE, DBX, and MORE. Dynamic Sound, Box 195(A), Stanwich, Ml 90759. (601) 323-0750.

HIGH-END AUDIO AT LOW, LOW PRICES! Awa. Allison. Audio Pulse, Bose, dbx, Cizek, ESS, Luxman, Micro Seiki, SAE, Technics Pro and many more! All factory fresh with full warranty. For discount prices call 212-254-3125. Or send $2.00 for our catalog and price list to DIRECT DISCOUNTS LTD., P.O. BOX 841, New York, NY 10003.


ELECTRO-VOICE raw loudspeakers. Audio Control equalizers. Tapeo amps, etc. Discount prices with quick response. Sonix Company, Dept. SR, Box 58, Indian Head, MD 20640. (301) 755-6432.


PHILIPS AND AUDAX LOUDSPEAKERS in stock at good prices with competent service. Madison Sound Speaker Components, 537 Holly Avenue, Madison, Wisconsin 53711. (608) 216-7337 or 238-1517.


DYNACO/DYNAKIT components and accessories. Free list. SCC, P.O. Box 91 (SR1079), Canton, Ohio 44711. (216) 452-6932.

ORDER THE BEST BRITISH drivers, x-overs, enclosures with transmission line. For design drawings, specs & prices send $3 to: IMPAX, 111 N. Fairview Ave., Mt. Prospect, IL 60059.

GO TRANSMISSION LINE

NOISE Reduction that eliminates the hiss but not the cymbals. Works on tapes, records, radio. 8800 DYNAMIC NOISE FILTER. LOGICAL SYSTEMS, 3314 ‘H’ St., Vancouver, Washington 98663.

MORDAUNT-SHORT SPEAKERS at BARGAIN PRICES. Pageant Series 2 in factory sealed cartons. List $495/par, now only $299/par. Mainland freight prepaid. NY residents add sales tax. Entertainment Sound Services Inc., 78 North Franklin Street, Hempstead, NY 11550.


ABSOLUTE LOWEST PRICES on all brands of Car & Home Stereo Equipment & Musical Instruments, Call (707) 963-8484, Write-万达 Distributors, 1148 Main St., St. Helena, CA 94574.

USED AMATEUR RADIO EQUIPMENT FOR SALE. Nationwide list $2.50. Amateurs Exchange, Box 374-SR, Visalia, CA 93277.

SPEAKERPLANS — Build ANY size speakers without special tools, experience. FOOLOPROOF, illustrated instructions, parts sources. 80’s SAVINGS! Rush $. SPEAKERPLANS, 275 Main, Skirving, NY 10770.
RARE LP's---buy collections throughout America and sell thousands set price. Send $1.00 for monthly list covering every possible category. Reasonable prices! Please indicate your interests. Rosa Robinson, 40 East 9th St., Apartment 3D, New York, N.Y. 1003, (212) 923-3952.

WORLD’S LARGEST, computerized catalog of rare records. 18,000 entries. Classical, show biz, popular, jazz, comedy, spoken. $2.50 refundable. Round Sound West, P.O. Box 2249, Los Angeles, Calif. 90008.

ORION records are easy to get! $5.00 includes posting. $1.00 for 2/ $5 each for 3 or more. Orion Master Recordings, P.O. Box 4007, Malibu, Calif. 90265.

ZARZUELAS — Magnificent Collection. Albums-Cassettes. Free Catalog. Inquiries are to be directed to: ALHAMBRA RECORDS, 555 W. 27th St., Hialeah, FL 33010.


GOVERNMENT SURPLUS
JEPS, $59.30; CARS, $33.50; 450,000 Items. Government Surplus... Most Comprehensive Directory Available tells how, where to buy your area $2.00. Moneyback Guarantee. "TOP 50 Surplus Disposal," Box 99249-EC-47, San Francisco, Calif. #4109.

MUSICAL INSTRUMENTS

ELECTRONICS

MOVIE FILMS

BOOKS & MAGAZINES
WORLD'S LARGEST RECORD COLLECTOR'S PUBLICA-TION! 40,000+ records offered each monthly issue! Sample越多!! Over 100 Brands!!! Krasco-Rep, 998 Orange Ave., Vail and Aspen. William McKinley & Assoc., Ltd., P.O. Box 18,400, Ruidoso, New Mexico 88345.

FREE Catalog. Everybody's Bookshop, Dept. ZD, 317 West 6th, Los Angeles, Calif. 90014.

PERSONALS
MAKes FRIENDS WORLDWide through international corre- spondence. international friends available. Details $1.00. D. Fraser, 208 S. 4th, DeSoto, MO 63020.

EDUCATIONAL OPPORTUNITIES
LEARN WHILE ASLEEP! Hypnotize! Astonishing details, strange catalog free! Autosuggestion, Box 24-ZD, Olympia, Washington 98507.

RUBBER STAMPS
RUBBER ADDRESS STAMPS, BUSINESS CARDS. Free Catalog — Fast Service. Jackson's, Brownsville Road — E-101, Norwood, MA 02062.

WANTED

CASH FOR YOUR Unwanted LP's and Prerecorded Reel to Reel Tapes. Reder, Box 3225, Hibbing, Minn. 55746.

HYPNOTISM
FREE Hypnotism, Self-Hypnosis, Sleep Learning Catalog! Drawer H400, Ruidoso, New Mexico 88345.

RUBBER STAMPS
RUBBER ADDRESS STAMPS, BUSINESS CARDS. Free Catalog — Fast Service. Jackson's, Brownsville Road — E-101, Norwood, MA 02062.

WANTED

CASH FOR YOUR Unwanted LP's and Prerecorded Reel to Reel Tapes. Reder, Box 3225, Hibbing, Minn. 55746.

HYPNOTISM
FREE Hypnotism, Self-Hypnosis, Sleep Learning Catalog! Drawer H400, Ruidoso, New Mexico 88345.

RUBBER STAMPS
RUBBER ADDRESS STAMPS, BUSINESS CARDS. Free Catalog — Fast Service. Jackson's, Brownsville Road — E-101, Norwood, MA 02062.

WANTED

CASH FOR YOUR Unwanted LP's and Prerecorded Reel to Reel Tapes. Reder, Box 3225, Hibbing, Minn. 55746.

HYPNOTISM
FREE Hypnotism, Self-Hypnosis, Sleep Learning Catalog! Drawer H400, Ruidoso, New Mexico 88345.
Your deck isn’t ready for the ultimate cassette tape.
Introducing the first line of decks that are.

25-18,000 Hz ± 3dB at -20VU with metal tape, 70dB signal-to-noise ratio. 6dB hotter output than ferrichrome.

The reason we can offer you SIX metal tape-compatible decks with specs like these, is all in the heads. Sen-Alloy heads. With better high frequency characteristics than the Sen-Dust most of our competitors use, Sen-Alloy just happens to record and erase metal tape perfectly.

So while our competitors have had to struggle with little problems like designing heads that could handle metal tape, we’ve had a head start towards packing our metal decks with more state-of-the-art features.

Our new "X-cut" Sen-Alloy record head extends bass response to lower than your woofers may go: 25Hz!

Our unique double-gap Sen-Alloy erase head gets 60dB erasure on metal tape at the critical 400 Hz level.

Our B.E.S.T. computer automatically finetunes deck bias, equalization and sensitivity to tape in less than 30 seconds.

Spectro-Peak and Multi-Peak L.E.D. indicators react 100 times faster than meters so you can make perfect, undistorted recordings.

How much does it cost to replace the weak link in your system with a JVC metal deck?

As little as $299, and no more than $750, suggested retail price.

After all, now that your ears are ready for metal tape, your pocketbook ought to be too.

For the name of your nearest JVC dealer, call 800-221-7502 toll-free (in NY State, 212-476-8300). Or write to US JVC Corp., 58-75 Queens Midtown Expressway, Maspeth, NY 11378.


* ±3dB @ -20VU
** Without noise reduction. ANRS adds 10dB @5kHz.

Now you’re ready for JVC.

CIRCLE NO. 35 ON READER SERVICE CARD
The Sound of Koss is no longer something you have to keep to yourself.

You no longer have to limit your listening to stereophones to enjoy the incredible Sound of Koss. Because now you can get the optimum loudspeaker system, and the Sound of Koss, in any Koss CM series system you choose.

KOSS CM 1010
Here's the ultimate 2-bandpass system. The Koss CM 1010 has a unique passive radiator to enhance the lower two octaves of bass. As well as a special 8-inch woofer to increase the midrange frequency response up to 3500Hz. And with the CM 1010's 1-inch dome tweeter, you get the highest energy output, and lowest distortion, of any tweeter on the market.

KOSS CM 1020
No three bandpass loudspeaker system currently available offers the benefits of the Koss CM 1020. Its dual ports improve cabinet tuning and structural stability. And its 10-inch woofer provides a 3db gain in efficiency, as well as flat response over the lower bandpass. In addition, the CM 1020 uses a 4½-inch midrange driver to capture all the energy and presence of this critical bandpass. And the CM 1020's unique 1-inch dome tweeter produces the highest energy output and lowest distortion of any tweeter currently available. Indeed, the Koss CM 1020 is the 3-bandpass loudspeaker system you really have to hear to believe.

KOSS CM 1030
The Koss CM 1030 represents the ultimate in 4-bandpass loudspeaker systems. It includes a 10-inch woofer, mass aligned dual port system, a parallel midrange system with two 4½-inch drivers, and both a tweeter and a 1-inch treble tweeter that feature a unique acoustic transformer. Each has been carefully and specifically designed to produce the optimum spectral characteristics of their respective bandpass. Uniting the CM 1030 into a total system that represents the ultimate in loudspeaker technology, is a unique, quasi-second-order crossover network. In all, the CM 1030 is so amazing, no other 4-bandpass system even comes close in bass, midrange or high bandpass performance.

KOSS CM 530
Setting entirely new standards for bookshelf speakers is the Koss CM 530. Whether you place them horizontally or vertically, they deliver perfect mirror imaging, an incredible degree of dispersion, and the breathtaking Sound of Koss.

KOSS PRO 4/TRIPLE A
Write us, c/o Virginia Lamm for a free copy of our full-color loudspeaker catalog. And when you visit your audio dealer to hear the incredible Sound of Koss loudspeakers, take an extra moment for a private listening experience with the world famous Koss Pro/4 Triple A. Once you've heard the Sound of Koss for yourself, you'll know why hearing is believing.