A BUYER'S GUIDE TO SIGNAL PROCESSORS
The "black box" approach to restoring (or adding) ambiance

HI-TECH DISC ROUNDDUP: some of the past year's best

EQUIPMENT TEST REPORTS: ADC Astrion Phono Cartridge ● ADS SS2300 Speaker System
Carver C-1 Preamplifier and M-500 Power Amplifier ● Crown FM Two Tuner
Polk RTA 12B Speaker System

DISC SPECIALS
Gatlin Brothers ● John Denver
Tom Verlaine ● Mink DeVille
Chico Freeman ● McCoy Tyner
Amanda McBroom
Susannah McCorkle
Gil Scott-Heron
Rodney Crowell
RAVEL: Daphnis et Chloé
BRUCKNER: Four Symphonies
BERG: Wozzeck
HAYDN: L'Infedeltà Delusa
KREISLER by Mintz
Placido Domingo
A WHOLE NEW TOP OF ALL THESE FEATURES.

have won Pioneer acclaim throughout the high fidelity industry.

Pioneer's engineers have designed an exclusive ID MOS FET transistor for the front end of the SX-7's tuner. It allows you to tune in stations with weaker signals without worrying about stronger stations causing distortion due to front end overload. That's what keeps the SX-7 virtually free of RF intermodulation.

But no matter how free a receiver is from all forms of distortion, it must be able to keep the station you select perfectly tuned for hours. Pioneer's quartz-PLL digital synthesized tuning does this by making drift virtually impossible.

Pioneer's exclusive Non-switching™ amp also eliminates distortion caused by output transistors switching on and off thousands of times a second in response to music signals. This is one of the reasons that the total harmonic distortion of the SX-7 is no more than 0.009% (continuous average power output of 60 watts per channel minimum at 8 ohms, from 20Hz to 20,000Hz).

And Pioneer's high-gain phono preamp section allows the use of either MM or low-output MC cartridges selectable by a front panel switch. There's even a Subsonic filter you can use to do away with very low frequency interference caused by record warps.

Now if you think all these features sound great in print, listen to them in person at your nearby Pioneer dealer. He'll demonstrate the SX-7 and an entire new line of Pioneer receivers. And you'll quickly see that we've done everything humanly possible to give you more music for your money.

That's what made Pioneer No. 1 in receivers. And that's what's going to keep us there.
AND ONLY PIONEER OFFERS
ENGINEERING CONCEPT ON

You'd expect a new receiver from the leading manufacturer of stereo receivers to be packed with exciting features. As you can see, it is. But Pioneer didn't get to be No. 1 in receivers by doing the expected and stopping.

So we developed the SX-7 using a unique engineering concept we call High Fidelity for Humans. It makes the SX-7 as superb to live with as it is to listen to.

At the heart of the receiver is a microcomputer that's been programmed to operate controls electronically. It affords the owner of the SX-7 operating convenience unlike any previously available in conventional receiver designs.

For example, the microcomputer's prodigious memory allows you to preset up to eight FM and eight AM stations and recall them instantly. Once set, all stations are directly accessible via "Station Call" buttons. And you can even recall them at the preprogrammed volume level because the microcomputer electronically controls volume setting.

What's more, with just the touch of a button you can search out the next station up (or down) the AM or FM tuning band. Stations are brought in perfectly tuned every time. And you can select any station by tuning it manually or scanning the entire band automatically sampling five seconds of each station.

But these human engineering features aren't all that make the SX-7 such an extraordinary receiver. It also offers features that
NO OTHER RECEIVER OFFERS ALL THESE FEATURES.
Computerized Push Button Controls:
Pioneer has programmed a microcomputer to operate controls electronically for improved accuracy, reliability and convenience.

Quartz PLL Digital Synthesized Tuning:
FM “Drift” is eliminated by this incredibly accurate tuner.

Station Scan:
Touch this control and you’ll hear five seconds of every station strong enough to meet the mute threshold.

Station Search:
Touch this control and move to the next station up, or down, the band.

Subsonic Filter:
This control lets you do away with ultra low frequency distortion caused by record warps and such.

Touch Volume:
The SX-7 will digitally display and recall any of 32 volume levels at the touch of a button.

Eight AM presets, eight FM presets:
The SX-7 will memorize eight of your favorite FM and eight of your favorite AM stations and retrieve them instantly.

Non-Switching Amp:
Pioneer’s patented amp design gets rid of transistor switching distortion once and for all.

High-Gain Phono Preamp:
Allows the use of either MM or low-output MC cartridges.

ID MOS FET Front End:
This exclusive transistor circuitry tunes in weak stations as clearly and quickly as strong stations.
How to Step Up to Three Heads, Twin Solenoids and Full Logic

(Without Wrecking Your Budget)

It's easy! Upgrade with the studio quality sound and performance of the new Realistic® SCT-32! Our top of the line gives you easy operation, a sensible price and exciting extras. You'll like the two-color fluorescent meters with switchable peak-hold that "remember" the highest signals for exact record-level setting. And the automatic Record Mute system that lets you edit — silently and electronically — as you record. Even pauses can be professional, because an LED flashes one per second for precise edit timing.

Separate record and play heads and independent Dolby® noise reduction systems let you monitor your tape — in Dolby — as you record. Each head has the optimum gap-length to do its job — either recording or playback — so there's no compromise in audio quality. A variable bias control permits "fine-tuning" for the best electronic match with any normal, chrome or metal cassette. With metal tape, frequency response is an amazing 30 to 21,000 Hz, ± 3 dB.

You get gentle and precise tape handling. Go from rewind to play to fast forward — no matter how you key the light-touch electronic controls, you're protected from tape snarls and damage. A built-in microprocessor acknowledges your commands and relays them — with full logic — to powerful solenoids that control all tape movement. Recessed LEDs display status of operation.

Want to hear a selection again? Thanks to the microprocessor memory, all it takes is one light touch! You can also select end-of-tape Auto-Rewind to replay the entire side. Or, rewind and stop automatically. And here's something you'll really appreciate: You can add a timer for recording off-the-air when you're not at home. With all these features for only $399.95, you should step up to the SCT-32 today. It's completely logical.

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Stereo Review

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COVER: Design by Borys Patchowsky; photo by Bruce Pendleton. See page 66.
The unique design of the head assembly for the Reference Series Model 105.2 and Model 105.4 is just one example of KEF's world-renowned research and engineering.

Each unit is housed in its own enclosure of selected dimensions to support optimum radiation over the operating frequency range, and is scientifically shaped to avoid unwanted secondary wave formation.

The outstanding acclaim for the Model 105.2 created a demand for a system of similar performance and accuracy from a smaller enclosure, and at a more affordable price. Hence the Model 105.4.

Like all Reference Series Speaker Systems, the Model 105.4 is a product of KEF's "Total System" design approach, where the drive units, filter network and enclosure are developed together to achieve a targeted response.

And like all Reference Series products, it also features the unique S-STOP, a self-powered circuit designed by KEF for total protection against accidental overload and fault conditions.

Of course, the ultimate criteria is in listening. Visit your KEF dealer and listen to the new Reference Series Model 105.4.

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Smyth Sound Equipment Ltd., Quebec.
CX NOISE-REDUCTION DECODERS will be built into Pioneer videodisc players, and the company will CX-encode future videodiscs, according to statements from CBS (developer of the CX system) and from Pioneer. RCA has adopted CX for its stereo videodiscs expected by mid-1982, and other producers of video hardware and software are expected to follow suit. They will join fifteen hi-fi equipment manufacturers who have licensed CX technology from CBS, and such record companies as RCA, Teldec, and the Warner-Elektra-Asylum group. New CX-encoded CBS releases include a French song recital by Régine Crespin and George Jones' latest Epic album, "Still the Same Ole Me." Thirty items from the CBS catalog have been chosen for CX encoding by early 1982, and CBS intends to encode its whole catalog.

TODD RUNDGREN, noted pop star and electronics whiz, has just become the first rock musician to develop a mass-marketed computer program. Sold by Apple Computers, Rundgren's program, the Utopia Graphics Tablet System, makes it possible to draw pictures on a computer's TV screen. Replacing a system that would draw a line of only one width and texture, Rundgren's lets the user make lines of varied sizes, textures, and colors. Saith an Apple spokesman: "The old system was like trying to paint with a ball-point pen. ...Rundgren's program replaces the old one with an enormous set of brushes and a palette of paint." Price, $75.

THE CELEBRATIONS OF VIRGIL THOMSON'S eighty-fifth birthday, which actually fell on November 25, 1981, will go on until next September with performances, conferences, festivals, and symposiums across the United States and in London, England, and Caracas, Venezuela. An anthology of the composer's prose, A Virgil Thomson Reader, has just been published by Houghton Mifflin, and in January Nonesuch will issue A Portrait Album, a collection of Thomson pieces (some recorded here for the first time) played by violinist Joseph Silverstein, pianist Paul Jacobs, and the American Brass Quintet.

A FIXED-CARD DIGITAL AUDIO PLAYER, still in laboratory prototype, can reproduce music with hi-fi quality, according to Digital Recording Corp., which has patented the system. Meant to be a home player, the system uses a low-power laser to scan a stationary film-like record. Digital Recording Corp., whose Soundstream subsidiary makes digital recordings, has been discussing joint development of the new product with other companies in the U.S. and abroad. Marketing could begin within about two years.

AWARDS: The Grand Prix du Disque has been awarded to Philips' recording of Wagner's Rheingold (part of that label's complete digital Ring set) and also to Philips' Pelléas et Mélisande (Sibelius, Fauré, and Schoenberg) played by the Rotterdam Philharmonic conducted by David Zinman....France has made Mstislav Rostropovich, music director of the National Symphony of Washington, D.C., an officer of the Legion of Honor....The Prix Mondial du Disque was awarded in Switzerland to the Deutsche Grammophon recording of Brahms' Fourth Symphony performed by the Vienna Philharmonic under Carlos Kleiber....The Royal College of Music in London has selected conductor Lorin Maazel to become one of its Fellows and has decided to bestow an honorary doctorate of music on cellist, music patron, and Columbia recording artist Charles, Prince of Wales (see this month's "Speaking of Music").

TEXACO'S LIVE FROM THE MET SERIES on PBS continues with Puccini's La Bohème in a new production by Franco Zeffirelli to be televised January 20. Teresa Stratas, Renata Scotto, José Carreras, and Richard Stillwell head the cast, and James Levine conducts. The same cast will be heard in Bohème on the regular Saturday afternoon Met radio broadcast of January 16. Other Met matinees on radio this month are a Stravinsky triple bill on January 2, Humperdinck's Hansel and Gretel on January 9, Verdi's Luisa Miller on January 23, and Wagner's Tannhäuser on January 30.
Speaking of Music...

By William Anderson

The vital mythic dimension: when it can’t be caused, I think, by a deliberate rejection of connectedness of most contemporary life is for the shallowness, the rootlessness, the unpointments as much as the British original our American Camelot needs stately appearance of the Royal Wedding so fresh in mind, it ought to have memory of the costly splendors of the Royal Lady’s efforts to get some decent china on the table in the White House and marveled anew at the regularly demonstrated obtuseness of our TV pundits. Even without the memory of the costly splendors of the Royal Wedding so fresh in mind, it ought to have been easy to draw a little mythic parallel: our American Camelot needs stately appointments as much as the British original does. Then again, perhaps it’s not so easy, for the shallowness, the rootlessness, the unconnectedness of most contemporary life is caused, I think, by a deliberate rejection of the vital mythic dimension: when it can’t be ignored, it is ridiculed. But how petty all the partisan carping becomes when we remind ourselves that the Round Table at the First House simply cannot be set with mismatched Melmac for a state dinner that is really a covert instrument of policy, show of power, and expression of national interest. The epithet “Camelot” was first applied to the White House during the Kennedy administration, perhaps because the incumbent appeared to be, in Norman Mailer’s fatuous phrase, “our first sexually viable president,” perhaps because the First Lady made a passable Guinevere (did she buy any china?), but more likely because Kennedy himself was seen as an Arthur, a sign, symbol, and promise of the nation’s return to greatness. In The Coming of Arthur, the first of Tennyson’s Idyls of the King, the poet states Arthur’s purpose: “Have power on this dark land to lighten it.” One could hardly be more explicit than that. Thus, though the Arthurian legend is about a lot of things, its principal mythic burden is to establish an identity between the health of the king and the health of the kingdom; whether owing to his incestuous liaison with his sister or the adultery of Guinevere and Lancelot, Arthur faltered in his purpose and the kingdom fell.

We know all this from Tennyson, from Sir Thomas Malory’s earlier Le Morte d’Arthur, and lately from Lerner and Loewe’s Camelot (recently revived on Broadway) and John Boorman’s superb movie Excalibur, whose message, despite fearful explicitness, was lost on unlettered critics, who thought it a sequel to Star Wars. But we know it from current events as well: the intense excitement generated worldwide last July 29 by the nuptials of H.R.H. The Prince of Wales and the Lady Diana Spencer at St. Paul’s Cathedral had its power source in the great, sprawling web of Arthurian legend, the union of the two being seen, consciously or unconsciously, as a welcome earnest of the continuation of the realm—there’ll always be an England.

Whether you are moved by all that or not, I think you’ll agree that there is something spooky, mythically resonant going on in Columbia’s two-disc commemorative recording of “The Wedding Service” and “The Royal Tribute” (C2 27655). The whole thrilling thing is there, from the Arrival of the Bride to the Procession of the Bride and Bridegroom, including even Lady Diana’s boo-boo in scrambling her new husband’s string of names—Charles Philip Arthur (!) George—and his whispered “well done.” The wedding-service music is brilliantly evocative (all English, except for a march by honorary Englishman G. F. Handel which made half of the royal-tribute disc suitably splendid). It begins with God Bless the Prince of Wales and ends with the Pomp and Circumstance March No. 1 (the verse begins “Land of hope and glory,” remember) A real collector’s item. As for the “royalties,” profits from album sales will go to the handicapped as part of the International Year of Disabled People. Noblesse oblige. Now, about that baby...
Beyond quartz, the world’s most precise tuning system, lies a new ability to expand sound.

Imagine you’re in a room with Technics SA-828 receiver. What you hear is beautiful stereo. Then you activate Technics variable Dimension Control. Incredibly, the sound begins to move. The stereo image widens to the point where the music begins to surround you. You’re intrigued by its richness and depth. You’re enveloped by a new experience in sound. That’s the wonder of the patented technology in Technics Dimension Control.

Just as wondrous is quartz synthesis, the world’s most precise tuning system. That’s how the SA-828 quartz synthesizer eliminates FM drift as well as the hassle of tuning. You can even preset and instantly retrieve 7 FM and 7 AM stations, all perfectly in tune.

Another perfect example of Technics technology is our synchro-bias circuitry. What it does is constantly send minute amounts of power to the amplifier transistors. And since they can’t switch on or off, switching distortion is eliminated.

And when it comes to power, the SA-828 has plenty: 100 watts per channel minimum RMS into 8 ohms from 20Hz to 20kHz with no more than 0.005% total harmonic distortion.

The SA-828 goes on to show its sophistication with a super-quiet phono equalizer, soft touch program selectors, fully electronic volume control, and a Dimension Control display that doubles as a power level meter.

Technics SA-828 is part of a full line of quartz synthesized receivers. Hear it for yourself. Beyond its quartz synthesizer lies a new dimension in sound.
Details: 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 factory new 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.

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**LETTERS TO THE EDITOR**

**Rolling Stones**

Steve Simels’ November review of the Rolling Stones’ new “Tattoo You” was nothing if not tirelessly predictable. His beloved Mick Jagger and Co. could belch and fart their way through an entire album—as, on occasion, I believe they have—and Mr. Simels would still rejoice in the social significance and cosmic importance of it all. Thanks, Steve, you’re such fun when you pretend to be objective!

Jon Woolsey
Burke, Va.

Steve Simels replies: Damn! And I was pretending to be subjective!

Please congratulate Steve (“Mr. Greenblatt died”) Simels for his excellent review of the Rolling Stones’ “Tattoo You” album. It was a funny review too; Steve has been reviewing for so long now that it’s hilarious to see him admit that he can’t hear as well when he was a kid.

Doyle Barker
Colorado Springs, Colo.

**Miking, Over- and Under-**

It is to be hoped you were successful in inspiring a little soul-searching in recording studios by publishing the two articles on miking in the October and November issues. But the principal point needs to be re-emphasized: it is as easy to overmike as it is to undemike (we have enough evidence of both), and the real trick is to keep out of the way of the artists. Ranada’s and Kazdin’s parallels with painting and photography therefore do not apply, for, unlike music, they are not performer’s arts. A better comparison—though even there it is rather tricky—might be with the theater, which also rests upon the triangle of interdependence needed for successful communication in the performing arts: the playwright (composer), the actor (musician), and the audience (listener). Producers of records and directors of plays would do well to interfere with those three as little as possible.

J. Gomez
Southampton, N.Y.

Andrew Kazdin’s “The Case for Multiple Miking in Recording” (November) gets the Heifer Dust Award. All it really is technically is multiple-mike mono mixed to two channels. No stereo recording can be made this way.

Maron Horonak
Webster Groves, Md.

Andrew Kazdin evidently thinks of recordings as interpretations, not preservation of musical performances. His desire to “lead [the listener] by the hand through the complexities of the music” imposes on the listener his arbitrary judgment of what is important in a piece of music. This is analogous to a cameraman’s zooming in on one section of a painting, forcing viewers to see what he thinks is significant. The folly of this approach to art lies in its violation of the artist’s intention that his work be viewed as a whole, with the spectator/listener free to choose which aspects of it, if any, merit closer attention.

If Mr. Kazdin wishes to record (not produce) classical music, then he should realize that his function is to capture accurately the original performance—nothing more, nothing less. “Purist” recordings preserve the spatial and artistic qualities of live performances without the unwanted and unwanted intrusion of a producer. If Mr. Kazdin wants proof of this, he should listen not only to Telarc discs but to those from such labels as Opus 3, L’Oiseau-Lyre, Harmonia Mundi, Proprius, Three Blind Mice, etc.

Benjamin H. Morehead
Gainesville, Fla.

**Smetana**

I would like to clear up a misunderstanding by George Jellinek (whose reviews I respect and enjoy) in his November review of the Eurodisc recording of Smetana’s The Bartered Bride. “Friedrich” Smetana, as the composer is referred to on the album, is not an artificial “Germanization” of “Bedrich” but the name Smetana himself used when speaking and writing in German. He has always been known and loved as Friedrich Smetana in German-speaking countries.

J. Gomez
Southampton, N.Y.

(Continued on page 10)
...and then came the SE-9.

35 years ago, to satisfy listening preferences, serious music lovers had to redesign their listening rooms. Remove the drapes. Add a rug here. Rearrange the upholstered sofa there. Get rid of that crystal chandelier! Bass and treble tone controls came later, and they helped—but only a little. When you needed a boost in that lowest bass region, you had to accept boosted upper bass and mid-range tones as well—whether you needed them or not.

By 1958, the first equalizers appeared. They allowed you to alter specific bands of tones to suit the needs of the listening room—and the music program. With special mics, a pink noise generator, and a real-time analyzer, you could electronically adjust your system to your listening preference. If—that is—you didn’t mind spending several thousand dollars and a half hour adjusting and readjusting controls to enjoy a half hour of listening.

Then came Sansui's remarkable SE-9 Compu-Equalizer. It takes the guesswork and the frustration out of equalization. At the touch of a button, the SE-9's built-in pink noise generator feeds its signals first to one speaker, then the other. Sounds picked up by the SE-9's calibrated microphone are then analyzed by its microprocessor. Sit back and watch in amazement, as the SE-9's motorized system moves each of its 16 fader controls (8 per channel) to create the curve that yields precisely flat response at your preferred listening location.

Touch another button, and the curve is memorized for future, instant recall. Move to another location—even another room—and the SE-9 can create and store a new curve—up to four of them.

At last, after 35 years, a perfect equalization system without errors or frustration. And, at a price that makes perfect equalization affordable for all serious music lovers.

See the SE-9 and Sansui’s truly complete line of high quality components and systems at your Sansui dealer today. Or write to us for details.
Rude Gesture
- While I was turning the pages of the November issue, something about the picture of the Blue Oyster Cult on page 120 caught my eye. (Somehow I have the feeling you’ve been waiting for this.) The happy-looking fellow on the left is blessing us readers with his extended wisdom of the day, or whatever he is trying to get across.

Homero Francesch
- Eric Salzman’s guess, in his review of Bartók piano records in the November issue, that Homero Francesch is a Romanian shows a surprising lack of awareness concerning a very gifted younger pianist. Homero Francesch is a Uruguayan in his mid-thirties who gained recognition at the 1973 Vienna Festival for his performance of the Bartók First Concerto. In 1974 Deutsche Grammophon released an excellent Francesch recital disc (2555 011) consisting of Schumann’s Papillons, Mendelssohn’s Variations Sérièuses, and Ravel’s Tombeau de Couperin.

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Mike Oldfield
- In Mark Peel’s October review, Mike Oldfield’s “QE2” album was labeled his seventh. I know of only six Oldfield LPs—“Tubular Bells” (1973), “Hergest Ridge,” “Ommadawn,” “Airborn,” “QE2,” and (with Maddy Prior) “Incantations.” Being a fan of Oldfield’s, I would like to add that seventh album to my collection. What is it?

NADA PENDIC
Chicago, Ill.


EURODISC
- James Goodfriend concludes his October review of a Eurodisc set of Strauss waltzes by saying that “the absence of any sort of notes at all with a full-price two-record set is not to be condoned.” Perhaps this lack is a regular characteristic of Eurodisc releases. Recently I bought their cassette recording (three tapes, full price) of Von Flotow’s Martha, and although it is sung in German, there is not a trace of libretto or notes in the box. Caveat emptor.

CHARLES J. SHEEDY
Woodhaven, N.Y.
In a world where sound reaches new levels every day, ADC delivers the ultimate high.

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Our complete ADC Sound Shaper IC line has an equalizer that is right for you and your system. The SS-110 ten-band full octave equalizer, a step up from our SS-1, features LED-lit slide controls and one-way tape dubbing. If you desire even more control, our twelve-band SS-II and top-of-the-line SS-III include two-way tape dubbing and sub-sonic filters. Our SS-III Paragraphic™ with 24 ancillary switches that enable you to control 36 bands per channel combines the ease and control of a graphic equalizer with the precision and versatility of a parametric. All at a price you can afford.

All of our equalizers feature LED-lit slide controls allowing for visual plotting of the equalization curve. And all ADC Sound Shapers embody the outstanding ADC technology that has made us the leaders in the industry.

To really complete your custom-tailored control-ability, our ADC Real Time Spectrum Analyzer is a must. Equipped with its own pink noise generator and calibrated microphone, the SA-1 provides a visual presentation of the changing spectrum through 132 LED displays. So you can actually see proof of the equalized sound you've achieved.

With an ADC Sound Shaper and an ADC Real Time Spectrum Analyzer, you can attain a new level of control. And ultimately, isn't that the musical high you've always wanted?

**Sound Shaper**
Frequency Equalizers and Spectrum Analyzer

Sound thinking has moved us even further ahead.

BSR (USA) Ltd., Blauvelt, N.Y. 10913, BSR (Canada) Ltd., Rexdale Ontario
Write for a free 24-page booklet "Shaping Sound At Home: A Guide to Equalization" (a $2.50 value).
*Sound Shaper is a registered trademark of Audio Dynamics Corporation. *IC indicates new Sound Shaper™ series.

CIRCLE NO 71 ON READER SERVICE CARD
SA-X. HIGH BIAS IS RICHER FOR IT.

The greatest honor a cassette can receive is to be held in higher esteem than the one now setting the high bias standard. SA-X has already gone beyond SA in frequency response, sensitivity, and resolution. It was intended to. With its ultra refined dual layer of Super Avilyn and the Laboratory Standard Mechanism, nothing less was possible. TDK believes sound reproduction should have no set barrier. No limit. For us, high bias was a limit to be surpassed. SA-X has won three international audio awards to date. It will no doubt win others. But we take awards philosophically. They represent our continuing effort to create the machine for your machine. In that, we could not be happier with SA-X.
Mitsubishi Cassette Deck With Dolby-C

Mitsubishi's DT-35 cassette deck is a three-head model with a two-motor transport and switchable Dolby-B or -C noise reduction. Transport control is via feather-touch selectors and logic circuitry. A capstan motor driving a heavy dynamically balanced flywheel maintains smooth tape travel and provides a wow-and-flutter specification of 0.04 per cent (wrms). Record and playback heads are contained in a single housing. Bias levels can be fine tuned with a slide control. Other features include switching for four tape types, timer-start controls, a bias-test switch for setting bias levels, mic/line switching, and a switchable multiplex filter. Nineteen-segment fluorescent meters display peak levels. Price: $490.

Circle 120 on reader service card

Shure Cartridge for SME Tone Arms

Exclusively designed for SME 3009 Series III and IIIIS tone arms, the Shure MV30HE cartridge offers the performance of Shure's V15 Type IV design in an SME carrier arm. The unit provides reduced effective mass, virtually eliminates headshell resonances, and gives convenience in installation. The cartridge has a hyper-elliptical stylus and a telescoped stylus-shank structure. To aid in precise cartridge alignment, two accesso- ries are provided. An overhang gauge is included for minimum distortion caused by lateral tracking error. Also provided is an azimuth gauge for checking the side-to-side tilt of the cartridge when viewed head on. Suggested tracking-force range is 3/4 to 1 1/4 grams. Price: $230.

Circle 121 on reader service card

Lightweight Kenwood Supra-aural Phones

Kenwood's KH-7, KH-5 (shown), and KH-3 stereo headphones are supra-aural types designed to produce a sound-pressure response tailored appropriately for human hearing. All three have pressure-molded polyester diaphragms about 1 inch in diameter and lightweight rare-earth magnets to give high power capability and low distortion. Each headphone set comes with an extra pair of snap-off foam ear cushions and a comfortable headband.

The top-of-the-line KH-7 has a frequency response given as 20 to 23,000 Hz, a maximum input power of 150 milliwatts per channel, and an input impedance of 32 ohms. The KH-5 is identical except for a top-end frequency limit of 22,000 Hz. The KH-7 and KH-5 come with 9 1/2-foot cords and weigh about 1 1/4 ounces (not including the cord). The lower-priced KH-3 has a frequency response of 20 to 20,000 Hz, an input impedance of 24 ohms, a 6 1/2-foot cord, and a weight of about 2 ounces. Prices: KH-7, $80; KH-5, $50; KH-3, $30.

Circle 122 on reader service card

Basic Turntable From Mission

Mission's Model 775 turntable uses a synchronous motor and belt to drive its platter. The platter's effective rotational mass is in its circumference. That mass, derived from lead placed around the edges of the turntable, also helps to reduce platter resonances. The platter and tone arm are connected by "constrained-layer-damped medium-density fibreboard" for rigidity plus low-resonance properties. The platter rides on a one-point-contact thrust bearing. Floor isolation is obtained by suspending the turntable on three relatively high-compliance Sorbothane feet that damp incoming vibrations. The turntable has a tone-arm mounting system which is said to permit easy adjustment of the spindle-to-pivot distance and of arm height. The picture shows the turntable with a Mission 774 tone arm installed. Prices: Model 775, $699; Model 774 tone arm, $399.

Circle 123 on reader service card

Onkyo's High-speed Dubbing Deck

The Onkyo TA-W80 cassette deck uses two motors to drive two transports side by side on the same chassis. One transport can only play, the other can both record and play tapes. It is possible, when copying tapes from one transport to another, to run both at twice normal speed (33 1/2 ips) to reduce copying time. Continuous playback of both transports is also possible, allowing long uninterrupted playback times. Other features include d.c.-servo-controlled motors, metal-head heads, metal-tape compatibility, feather-touch controls, LED-level meters, a recording-mute switch, mic/line mixing, Dolby-B circuits, and timer-activated switching.

Frequency response using metal tape is...
Digital-synthesis AM/FM Tuner From Adcom

- The quartz-referenced digital-synthesis tuning system of the Adcom GFT-1 tuner delivers a claimed tuning accuracy of 0.00025 per cent. Special precautions have been taken to prevent leakage of the digital signals into the sensitive front-end circuitry of the tuner, with a resulting reduction of distortion from 30 to 15,000 Hz ±3 dB; the corresponding signal-to-noise ratio is 65 dB.

- Wow and flutter are 0.06 per cent (wrms). Dimensions are 16½ x 4½ x 10½ inches, weight about 12 pounds. Price: $400.

Circle 124 on reader service card

Three-head Cassette Deck From Realistic

- The realistic SCT-32 cassette deck (Radio Shack catalog number 14-624) is a three-head, solenoid-operated, logic-controlled unit with double Dolby-B noise-reduction circuitry for correct monitoring of just-recorded signals. The light-touch push-buttons controlling the logic circuitry (which in turn controls two direct-acting solenoids) have recessed, color-coded LED displays. Price: $375.

Circle 125 on reader service card

Scott Amplifier With Wide-range Power Meters

- H. H. Scott's 458A Slimline stereo integrated amplifier has dual-range power meters which automatically switch the full-scale range from 0.0015 to 1 watt to 0.15 to 80 watts as output varies. As the range switches, the panel markings change. The peak-hold, auto-ranging meters utilize a custom-made fluorescent tube for the display. The amplifier portion of the 458A has an output-power specification of 65 watts per channel into an 8-ohm load with no more than 0.03 per cent total harmonic distortion. The power-amplifier section has fully complementary output-stage circuitry. Other features include a switchable moving-coil/moving-magnet phono preamplifier, connections and switching for two tape decks, a loudness switch, a stereo/mono switch, switchable infrasonic and high-frequency filters, bass, mid-frequency, and treble tone controls, and connections and switching for two pairs of speakers. The front panel also has a headphone jack and a switch to dim the brightness of the power display. Price: $349.95.

Circle 126 on reader service card
Bob Carver tells you (briefly) how Sonic Holography works. (Others tell you how it sounds.)

Q. Exactly what is Sonic Holography?
A. It's a term I use to point up the similarity of the sonic illusion that enables one to hear a stereo recording in three dimensions, and the optical holographic illusion that allows one to see a flat photograph in three dimensions.

Q. What does Sonic Holography sound like?
A. I'll let others answer that for me. Hal Rodgers, Senior Editor of Popular Electronics: "When the lights were turned out we could almost have sworn that we were in the presence of a real live orchestra."

Julian Hirsch of Hirsch-Houck Labs: "The effect strains credibility—had I not experienced it, I probably would not believe it... the 'miracle' is that it uses only the two normal front speakers."

Larry Klein, Technical Director of Stereo Review: "...it brings the listener substantially closer to that elusive sonic illusion of being in the presence of a live performance."

And High Fidelity put it this way: "...seems to open a curtain and reveal a deployment of musical forces extending behind, between and beyond the speakers... terrific."

Q. What do I hear when I'm not in the middle?
A. We'll let Julian Hirsch describe what he heard: "still noticeably better than normal stereo, particularly in respect to a greater sense of 'warmth' such as is experienced in a concert hall."

Q. How does Sonic Holography differ from stereo reproduction?
A. Very significantly. Simply put, in a live performance, each instrument is a source of sound that reaches your ears as two sound arrivals—one for each ear. The difference in strength and arrival times at each ear provides the primary cues that your brain uses to localize and create all the sonic images. In stereo reproduction, four sound arrivals produced by each instrument reach your ears—two arrivals from each speaker for each ear. That's precisely two too many for accuracy. And that's why directionality in stereo is limited by the positions of the speakers. Sonic Holography eliminates those unwanted extra arrivals by carefully calculated and controlled electronic techniques, including complex cross-fed interference signals. These signals combine in space with the primary signals, creating sonic images outside and beyond the boundaries of the two speakers. There is a clear sense of the acoustic space, and the spatial information (phase and timing) of the original performance is deployed naturally over a broad, deep arc in front of you. That's why Larry Klein described Sonic Holography in Stereo Review as producing "a far more plausible sonic illusion of space and localization than is produced by normal stereo."

Q. Isn't Sonic Holography something like time delay?
A. Not at all. The goal of time delay is to recreate only the spatial ambience of the original recording environment. And to do that it requires additional amplifiers and rear speakers.

Q. How can I add Sonic Holography to my system?
A. Three different ways.

The C-4000 Control Console includes the Sonic Hologram Generator plus: a full-function stereo preamplifier, a time-delay system with built-in 40 watt (total) power amplifier for time delay speakers, the Autocorrelator system that reduces noise up to 8 dB with any source material, and a peak unlimiter/downward expander that nearly doubles dynamic range.

The C-1 combines the Sonic Hologram Generator with a full-function preamplifier.

The C-9 Sonic Hologram Generator allows you to add Sonic Holography to any system, including one with a receiver.

Q. How can I get more information?
A. Easily. Just write to us.

CARVER CORPORATION
P.O. Box 664 14034 N.E. 193rd Place Woodinville Washington 98072
CIRCLE NO. 11 ON READER SERVICE CARD
New Products
latest audio equipment and accessories

AT LAST
A DIFFERENCE
IN SOUND YOU
CAN SEE.

Most speakers give you true stereo in just one part of the room. BES Speakers give you true stereo virtually everywhere. That’s because the heart of a BES Speaker is not a cone, but a diaphragm that vibrates much like a guitar string, projecting sound in every direction simultaneously. You get 360-degree sound. True omnidirectional sound. Sound as close to live as you can get.

Listen to BES and hear true stereo. Everywhere.

BES SPEAKERS
THE NEXT DIMENSION IN SOUND
Bertagni Electroacoustic Systems, Inc. 345 Fischer Street, Costa Mesa, CA 92626 (714) 549-5833.
CIRCLE NO. 9 ON READER SERVICE CARD

Low-cost
Cizek Speaker

☐ The Cizek Model 727 speaker has an 8-inch heavy-duty woofer with a high-temperature long-throw voice coil and a 2/2-inch cone tweeter. The crossover frequency between the drivers is 3,000 Hz. Specified frequency response is 60 to 17,000 Hz ± 3 dB. Efficiency is given as 89 dB sound-pressure level at 1 meter with a 1-watt input. Nominal system impedance is 4 ohms. Minimum recommended amplifier power is 10 watts per channel into a 4-ohm load. Dimensions are 10 7/8 x 15 7/8 x 5 3/4 inches; weight is 15 pounds. Price: $97 each.
CIRCLE 128 ON READER SERVICE CARD

Mura’s Portable Amp for Portable Cassette Players

☐ Mura Corporation’s “Steppin’ Out” stereo amplifier/speaker system is designed to be used with personal stereo units, either cassette players or stereo FM radios. The device incorporates two 1-watt amplifiers and two efficient 4-inch speakers. There is a special “Stereo Wide” switch to enhance stereo separation. Volume is controlled by the personal stereo player just as when using headphones. The Steppin’ Out requires four C-cell batteries. A personal stereo unit is fastened to the Steppin’ Out by clipping it to the system’s attachment bar; electrical connection is via a stereo mini phone plug. Dimensions are 17 x 7 x 3 inches, weight 44 ounces. Price: $80.
CIRCLE 130 ON READER SERVICE CARD

NOTE: All product descriptions and specifications quoted in these columns are based on materials supplied by the manufacturers, who will respond directly to reader requests for further information. Domestic inflation and fluctuations in the value of the dollar overseas affect the price of merchandise imported into this country. Please be aware that prices quoted in this issue are therefore subject to change.

BES SPEAKERS
THE NEXT DIMENSION IN SOUND
Bertagni Electroacoustic Systems, Inc. 345 Fischer Street, Costa Mesa, CA 92626 (714) 549-5833.
CIRCLE NO. 9 ON READER SERVICE CARD
THE TAPE HEARD
ROUND THE WORLD.

When you buy a Sony audio tape you are buying the history of tape recording. Right from the start, Sony has been serious about tape, and no one knows more about making tape — and the machines that play it — than Sony.

Sony is one of the pioneers in tape recording. It was Sony who introduced the first recording tape in Japan. Sony who introduced the first dual-coated ferrichrome tape. Sony who developed the exclusive SP mechanism, that transports the tape with incredible smoothness and precision, use after use.

No wonder more than one billion Sony tapes have been sold in over 140 countries. (Now, that's real proof of quality and dependability!)

If you want to hear history, listen to any Sony audio tape. Each one has a heritage of breakthrough technology. Each one will produce the finest sound you've ever heard. And in the future, Sony will still be creating breakthrough state-of-the-art tapes. But that's only to be expected. After all, each and every one is named Sony.

SONY.

CIRCLE NO. 47 ON READER SERVICE CARD
Golden Ears

Q. How long will it take me to develop the "golden ears" that some audiophiles have—or at least claim to have?

BARRY WESTOCK
Kokomo, Ind.

A. In audio circles, golden ears are sometimes developed using much the same procedure as governed the growth of Pinocchio's nose. However, the best way I know of to "grow" golden ears is to appren-
tice yourself to someone who knows sound quality and ask him to demonstrate and point out differences. Almost everyone has the ability to hear the differences between good and bad sound; what they lack is the knowledge and training needed to discrimi-
nate between the two. Once that's achieved, you then want to be able to pinpoint exactly what's wrong and where it's occurring in the audible frequency spectrum. And fur-
ther experience will ultimately make it pos-
sible to guess the most likely source of the offending sonic effect. (A mistricking car-
tridge sounds different from an overloading amplifier or an overdriven speaker, but un-
fortunately there's no way I can illustrate the difference in print.)

I find that "subtle" audible aberrations are almost always caused by small measur-
able frequency-response jiggles despite the tendency of some audiophiles to invest the effect(s) with purely subjective and hence unanalyzable qualities. For example, a slight (1 dB or so) frequency-response peak in the upper frequencies is easily corrected, but once its effect is labeled "glassiness" it becomes a mystical property not subject to objective analysis. My point is that audio effects can be investigated scientifically, and, in fact, the only reliable road to improvement is the use of very carefully controlled listening tests combined with precise measurements. For example, using only polypropylene capacitors, as advocated by some (with or without the eye of a toad and the ear of a bat), may indeed provide theoretical technical advantages in some circuits, but as far as I'm concerned, careful listening tests have so far failed to disclose any audible advantage.

So my advice to any aspiring golden ear is not only to learn to listen critically, but also to learn how to listen scientifically. Insofar as possible, avoid leaps to prema-
crude conclusions, and do not commit your belief too quickly to those who have discov-
ered strange new sources of distortion, par-
ticularly when such distortions frequently disappear if subjected to the harsh light of a scientifically conducted listening test. And finally—this is the hard one—try not to be too ego-involved in having the "right" audio viewpoint. When the evidence mounts con-
clusively against a cherished belief, feel free to switch positions. (Would you believe that even Larry Klein has been proved wrong on occasion?)

I heed these words, and one day your ears may also turn to gold. (At the time of writing, that would make them worth about $430 an ounce.)

Signal Linkage

Q. My system consists of an integrated amplifier, digital FM tuner, and di-
rect-drive turntable. If I leave the tuner on when I'm playing a record, I can hear the broadcast faintly in the background when the tunable shuts off. A friend suggests that the problem is caused by a weak link in the amplifier (his also does it). Can this problem be corrected?

NICHOLAS MONTEPARO
Neptune City, N.J.

A. I think that what you and your friend are experiencing is not a "weak link" but rather too strong a "linkage" between the FM input and the other parts of the amplifier circuit. This occurs usually be-
cause of capacitive coupling between signal-carrying wires or the conductors on a printed-circuit board. (The same capacitive-coupling effect in other circuits can cause loss of stereo separation.)

Because of their higher impedances, tube circuits had a much more severe leakage or crosstalk problem. The designers therefore frequently used input-selector switches that shorted out the inputs from the non-selected channels. I think a few solid-state equip-
ment designers still employ such switching, but others don't believe it to be justified. In any case, since you don't really have a

(Continued on page 20)
YOU'VE NEVER HEARD LOUDSPEAKERS LIKE THIS BEFORE.

The new Celestion ULTRA™ Tweeter, vibrating at 3kHz in perfect piston motion. Frozen in time by Celestion's unique laser interferometer.

In accuracy. Response. Power-handling capability. And efficiency that makes even the most modestly-powered receivers and amplifiers sound dazzling.

All, because our engineers have accomplished what no one has ever done before. Frozen vibrating drivers in time. Observed them in the operating environment of an actual speaker system. Then magnified the results with 36,000-point, three-dimensional laser-plotted computer accuracy.

We've used this exciting new tool to uncover the problems of conventional loudspeaker designs. Discover the secrets of critical dimensions. Select the best materials. Optimize physical and electrical characteristics. To obtain maximum performance from drivers individually and as a total system.

The result is our incredible new ULTRA™ Ditton line, now at your Celestion dealer. You'll appreciate in an instant, what took years to achieve. At prices as unbelievable as the sound.

* Ultra-accurate Laser Topographic Response Analysis

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AND PROFESSIONAL LOUDSPEAKERS
You'll know...in an instant

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CIRCLE NO. 12 ON READER SERVICE CARD
QUALITY FM STEREO FROM PERSONAL HEADSET RECEIVERS.

The Mura Hi Stepper™ receivers have become the industry standard for personal FM stereo. Of course Mura already had the headset technology from its Red Set™ line. To the Red Set Mura added a high sensitivity (3 µV for 30dB of Quieting), low current drain (30 ma from AA batteries) stereo receiver. Each channel of the audio section is a 3 stage amplifier with a push-pull output stage—all to drive a headset speaker with 98dB/mW sensitivity! Overkill for only a few milliwatts? Not for the Mura Hi Stepper. Even the Hi Stepper HI-3 (with AM) uses dual IFT's to squeeze the best frequency response possible out of the AM band.

Whether you choose the FM Stereo Hi Stepper (HI-6) or the AM/FM Stereo Hi Stepper (HI-3) you get audiophile quality in a portable, personal stereo sound system.

"weak-link" problem, the solution is simply to turn the tuner off when listening to records—and vice versa.

Amplifier / Speaker Output

Q Why is it that an amplifier's power output goes up if the speaker load is reduced from 8 to 4 ohms? Also, the rear panel of my 50-watt-per-channel amplifier has terminals (and front-panel switching) for two pairs of speakers. Can you tell me whether the 30 watts will be divided equally between the pairs of speakers in each channel, or what?

ARNOLD SPRINGER
Marion, Ohio

A It may come as shocking news to most readers (it did to me long ago) that amplifiers don’t really put out watts, they put out volts. A transistor amplifier is essentially a constant-voltage device, meaning that a certain signal voltage applied to its input jacks will produce a certain signal voltage at its output terminals, the amount determined mostly by the gain of the amplifier and not by the impedance of the load at the amplifier’s speaker terminals.

Let’s take Mr. Springer’s amplifier as an example. With an input voltage of, say, 0.5 volt, it delivers 20 volts at the speaker terminals. Measured across an 8-ohm load, 20 volts is the equivalent of 50 watts. (The relevant part of Ohm’s Law is W = E²/R, where W is watts, E is the 20-volt output signal, and R is the 8-ohm load.) However, if we switch to a 4-ohm load, the amplifier would continue to put out 20 volts, which would then be the equivalent of 100 watts—assuming that the amplifier had the capacity to do so. (Power-supply and output-transistor limitations usually reduce the maximum 4-ohm output to something like 150 per cent of the full rated 8-ohm output.)

If the two sets of speakers Mr. Springer intends to use have identical impedance characteristics, then whatever voltage (and hence power) the amplifier is putting out would be divided evenly between them. However, no two 8-ohm speakers of different make or model are likely to have impedance curves that match at all frequencies. So if two different speakers in each channel are connected in parallel (the usual amplifier switching arrangement), then the voltage across each channel’s pair will remain constant but the current through each would reflect the fact that its impedance—and therefore the wattage—is varying with frequency.

To complicate the matter further, the impedance of a speaker has no bearing on its sensitivity (efficiency) and thus provides no guidance as to how loud the speaker will play with a given input. Further, doubling the power fed to any speaker provides only a 3-dB increase in loudness, which is barely perceptible on any complex musical program material.

Because the number of questions we receive each month is greater than we can reply to individually, only those letters selected for use in this column can be answered. Sorry!
Why every record sounds better with Dual’s exclusive ULM tonearm system.

The moment the ULM tonearm tracks your favorite record, you will hear a purity of tone that has never before emerged from its grooves.

ULM is Dual’s exclusive Ultra Low Mass tonearm system with total effective mass of 8 grams. That’s less than half the mass of conventional tonearm and cartridge combinations.

"...tracked the most severely warped records in our collection, usually so well that we heard nothing wrong."

—Stereo Review

"Navigating the worst warps we could find, the Dual/Ortofon combination proved very agile indeed, with nary a mistrack."

—High Fidelity

"Even a severe warp that would normally throw the pickup into the air will usually give no more than a slight 'thump'...and most warps are undetectable by ear."

—Popular Electronics

"The Dual takes dead aim at the fiend of disc reproduction—the warped record—and response to record warps practically is eliminated at the source."

—Stereo

One lab also listened to a favorite unwarped record played by the same ULM tonearm and cartridge system. Its reaction:

"There is no way measurements, or mere words, can describe the acoustic presence... highs are crystalline, with a purity we haven't heard before. The bass is so clean that one can hear new sounds from records, such as the harmonic vibration of unplayed strings on the double bass... overall definition and transient response were outstanding."

—HiFi/Stereo Buyers' Guide

In short, ULM is not just desirable, it's essential—with all records.

If you'd like to hear the difference ULM can make, visit your audio specialist. (Bring your favorite record, especially if it's badly warped.)

You'll also be pleased to hear that the new Dual ULM turntables are priced lower than you may think. For example, the single-play/multiple-play Dual 1253 with Vario-belt drive is less than $150.

For complete information, write to United Audio, 120 Sc. Columbus Ave., Dept. S, Mt. Vernon, NY 10553.

Dual

United Audio is the exclusive U.S. distribution agency for Dual.
The powerful Speakerlab Super 7 returns, now dramatically improved with an open and clear sound that's so awesome you'll soon understand why they call it "legendary". The 10" and 12" polypropylene/Polylam™ woofers, a 6-1/2" mid-bass/mid-range and the LT 2155 Samarium Cobalt Leaf Tweeter can handle up to 200 watts of power if you can. Available in lacquered oak or rosewood Clearseal® finish.

COMPATIBILITY PROBLEMS

I FINALLY have a new car stereo to replace the one that got ripped off last spring. This one is an Alpine system, wired so I can add or substitute components from other manufacturers. Right off the bat, I ran into one of the common car-stereo installation problems: component incompatibility.

The difficulty of putting together systems of mixed manufacture points up one serious way in which the car-stereo industry lags well behind the home-component one. You can't just pick and choose car-stereo components for their features and performance and assume they'll go together easily, as you can with home gear. Since I intend, in the line of duty, to do A-B comparisons between my installed system and other new ones that come along, I needed to consider all the variables involved—variables that usually aren't problems in home systems.

Variable Number One is plugs. Both my new Alpine equipment and my old Clarion use five-pin DIN plugs. But they're not wired alike; the only pin connection they use in common is ground, though the left-channel "hot" lead of one does use the same pin as the other's right-channel "hot" lead. Other manufacturers use still other types of plugs.

Variable Number Two is amplifier switching. High-power car amplifiers are usually connected directly to the car's battery and switched on and off by relays linked to the in-dash unit's on/off switch. Unfortunately, there is no single commonly accepted technique for switching on remote amplifiers, and in-dash units lack the switched power sockets found on home components. So some car amplifiers are designed to switch on when they receive an audio signal, while others (including my old Clarion) switch on when they receive a switching impulse from the in-dash part of the system, sometimes through the signal cable and sometimes through a separate line. This means that a Brand-X in-dash unit may not be able to switch on a Brand-Y remote power amplifier.

Variable Number Three: signal levels. If your front-end preamp-output level is 200 millivolts at full volume while the power amplifier is designed for a full-power output with a 500-millivolt input, you may be pretty disappointed with the sound level available. Alternatively, a 500-millivolt preamp output connected to a power amplifier that requires only 200 millivolts input for full output may result in a touchy or too-fast volume control.

All of these variables can be overcome. Plug adaptors are a nuisance to wire, but the principles of wiring them are straightforward enough—if you have diagrams of both plugs' pin setups. And some prefabricated adaptors are available. Adaptors also exist to match signal levels, and some manufacturers (Kenwood, for example) have variable output levels on their front-end units and variable input levels on their amps. I would assume that amplifiers with signal-actuated automatic turn-on would be compatible with anyone's front end once the plugs and signal levels were matched.

These factors didn't force me to build an all-Alpine system around the Alpine equalizer I had, but they did make it the easiest way to go. And it was hardly a hardship: my new system has most of the features I like, and seems to work quite nicely.

The old Ad Hoc Committee (now part of the Electronic Industries Association), which first established industry guidelines for rating car-stereo specifications, has been working on the compatibility problem. According to Pat Hart, a member of the committee when he was at Kenwood, "That situation, the last I heard, was still a total mess. Everyone had too much investment in doing it their own way and didn't want to change. I think it will be a long time before they get it all together."
"Delete the radio and I’ll install Jensen. Then it will be loaded."

To some people, no car is fully equipped unless it has a Jensen® car audio system. And if you’re buying a new car, you may have an option you should know about. It’s called a “delete” option. Simply stated, you can order your new car without its factory installed radio and speakers and their cost is taken off the base price of the car. Check out the quality, the features and what that factory installed equipment is costing you. Then go to your Jensen car audio dealer and compare it to a Jensen stereo system. He’ll help you find the one that’s just right for you.

By exercising your delete option you could have a Jensen system, tailored to your own taste, from the beginning. Instead of replacing factory equipment later on. So if you’re buying a new car and it’s the sound that moves you, investigate your “delete” option. After hearing Jensen, you’ll want to use it.

JENSEN
CAR AUDIO

When it’s the sound that moves you.

CIRCLE NO. 27 ON READER SERVICE CARD
**Tape Talk**

By Craig Stark

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**Dуббинг DBX**

Q. Is it possible to dub decoded DBX material from open-reel tape onto another open-reel machine (or a high-quality cassette deck) that does not have the DBX system?

A. It is certainly possible, but it may prove a frustrating experience. Once DBX-encoded material is decoded it has an extremely wide dynamic range intended to match that of the original live music. Professional digital recorders can handle this kind of "loud-to-soft" ratio, but the problem you will face (especially with a cassette deck) is that the dynamic range of your machine is considerably less than that of the musical source. Those who, like myself, do live recording have had to live with this problem for years, and we've used compressors, limiters, and subtle manual "gain ridings" (changing the recording level as the music is being performed) to try to "fit" the "large" sound into a somewhat undersized container. If this is skillfully done, the musicians themselves can't detect that you've adjusted the sound range—just as they will have successfully faked a couple of things in the performance that they knew weren't right, but which you didn't catch in the listening. So, you can copy decoded DBX material if you use the same care as you would have used on the live original.

Q. My deck's meters are calibrated from what is the difference between VU and dB meters on tape decks, and before it is decoded and then playing the back process. By dubbing your DBX disc before it is decoded and then playing the tape back through the decoder you should get a very good result.

Q. What is the difference between VU and dB meters on tape decks, and what do the two sets of numbers on the scale mean with respect to recording?

A. "VU" stands for "Volume Unit," and 1 Volume Unit equals 1 decibel (dB). A decibel is a logarithmic ratio between power, voltage, or current levels that is useful in measuring an audio signal because the ear's perception of loudness ("volume") is roughly logarithmic. A doubling of the power level of a given sound (a 3-dB increase) doesn't sound twice as loud. For one sound to be perceived as twice as loud as another the power ratio has to be about 10:1 (a 10-dB increase). A decibel step was originally found, experimentally, to closely approximate the least change in level that the ear could detect, at least with normal music or spoken material.

Though the VU meter is based on decibel units, there's more to it than that. When measuring sounds that have rapidly varying levels—such as music and speech—meter needles don't accurately track the complex waveforms. A joint venture between Bell Labs, CBS, and NBC produced, in 1939, a standardized meter suitable for broadcast and telephone-line measurements, and it is

(Continued on page 26)
BASF Chrome. The world's quietest tape is like no tape at all.

Today, only one high bias tape is able to combine outstanding sensitivity in the critical high frequency range with the lowest background noise of any oxide tape in the world.

That tape is BASF's Professional II. Professional II is like no other tape because it's made like no other tape. While ordinary high bias tapes are made from modified particles of ferric oxide, Professional II is made of pure chromium dioxide. These perfectly shaped and uniformly sized particles provide a magnetic medium that not only delivers an absolute minimum of background noise, but outstanding high frequencies as well.

Like all BASF tapes, Professional II comes encased in the new ultra-precision cassette shell for perfect alignment, smooth, even movement and consistent high fidelity reproduction.

With Professional II, you'll hear all of the music and none of the tape. And isn't that what you want in a tape?

The difference in noise level between PRO II and ordinary high bias tapes is greatest where the human ear is most sensitive (20 kHz).

Guarantee of a Lifetime All BASF tape cassettes come with a lifetime guarantee. Should any BASF cassette ever fail—except for abuse or mishandling—simply return it to BASF for a free replacement.

Mobile Fidelity Sound Lab. BASF Professional II is so superior it was chosen by Mobile Fidelity Sound Lab for their Original Master Recording High Fidelity Cassettes. These state-of-the-art prerecorded cassettes are duplicated in real time from the original recording studio master tapes of some of the most prominent recording artists of our time.

For the best recordings you'll ever make.
SANYO WANTS YOU TO KEEP IT CLEAN

That's why Sanyo™ recommends the Allsop 3 cassette deck cleaner for their state-of-the-art portable stereo. It's the Sanyo M9982F which combines a sensitive AM/FM stereo radio with an advanced cassette player capable of playing metal tape. So you can listen to stunningly accurate sound anywhere.

The Allsop 3 is the only cassette cleaner endorsed by Sanyo and other leading manufacturers. For a good reason. Because Allsop uses a totally unique, non-friction cleaning method: the wet system. It's non-abrasive. The Allsop 3's gentle cleaning action, using separate virgin wool pads, keeps the capstan, pinch roller and head dust free and ready to sing. And virtually eliminates tape mangling and "eating" caused by dirty capstans and pinch rollers.

Just moisten with our special cleaning solution and insert. In 20-40 seconds it's as clean as a whistle. As Sanyo says, "Keep it clean." Swab your decks with Allsop 3.

ALLSOP, INC., POST OFFICE BOX 23, BELLINGHAM, WASHINGTON 98227
CIRCLE NO. 3 ON READER SERVICE CARD

still used in professional sound applications. Among the meter's many defined characteristics, its needle movement will reach the "0 VU" point on the scale (about 71 per cent of full-scale deflection) within 0.3 second, with a tolerance of -1 to +1.5 per cent. The dial scales of a VU meter are calibrated from 20 to +3 VU and from 0 to 100 per cent. The percentage markings are of little interest to the tape recordist, but they are vital to the broadcaster because they indicate the legally permitted modulation percentage of the transmitter.

From even this partial description of the VU meter two things should be clear. First, its tolerances (and there are many more that I haven't listed) are so highly defined that genuine VU meters are too expensive to use in all but the most costly audiophile tape decks. If your deck has "VU" meters it's probable that only the dial scale is really authentic, if the meter ballistics (needle response) are also "VU," the manufacturer will advertise that fact, and you should expect to pay for it. Second, that 0.3-second (300-millisecond) VU response is rather slow. It may be reasonable for a general, overall estimate of perceived loudness, but it certainly is going to understate fast peaks (transients) that can drive a tape recorder into distortion. Part of the art of a professional recording engineer consists in knowing how far to trust a genuine VU meter with different kinds of music; audiophiles with nonstandard "VU" meters are at an even worse disadvantage, for no two machines are likely to agree!

Technically, a "dB meter" is not standardized beyond the fact that its dial scale is calibrated in decibels. Nonstandard VU meters are, in fact, dB meters. In practice, however, the term has come to denote a "peak-reading" indicator, which most amateur recordists (and many professionals) find easier to use. As their name implies, peak-reading meters register the maximum instantaneous electrical value of the signal—which is what drives a tape into distortion—in decibels, rather than the averages registered by VU types. The electronic indicators (LED strings) used on most current decks are inherently "peak-reading" indicators (some have a switch to slow them down to approximate VU characteristics).

Jammed Cassette

Q Help! What can I do about a jammed cassette? My player is fine, but one of my tapes simply refuses to run. Loosening its screws helped a little, but not enough.

A Try patting the cassette on a hard surface about twenty times on each side. This might help loosen the binding tape. If that doesn't work, you'll find that electronic parts stores, such as Radio Shack, sell replacement cassette shells with leader tapes attached to the hubs (known as "C-05s"). These come individually or as part of a repair kit that includes splicing tape, an editing block and razor blade, etc. If your jammed tape is valuable enough to you to warrant your manually winding it into a new shell, this is the easiest method.
The new GX-77 is the world's first open-reel machine with a special setting for the new ultra-high-density "EE" tapes.

For the uninitiated, "EE" simply stands for extra efficiency. And the innovators at both Maxwell and TDK are committed to it.

For some very sound reasons.

**Numbers don't lie.**

And what the numbers are saying is this. You don't have to sacrifice performance for economy. Not with a GX-77 and "EE" tape. Because at an efficient 3⅔ ips. you'll still get the same frequency response, S/N ratio and dynamic range of conventional tape played at 7⅝ ips.

But see for yourself. Below. The specs are spectacular at any speed.

**There's sound engineering, too.**

The GX-77 also features quick-reverse playback/record, 3 motors, 4 AKAI GX heads and an optional dustcover that's the ultimate cover-up.

Plus a unique, motorized tape-loading mechanism that guarantees virtually perfect tape-to-head alignment. All at the touch of a button.

And all for a relatively modest $775 suggested retail price.

Or, if you prefer the benefits of "EE" tape on a grander scale (including 10¼" reels) consider the new AKAI GX-747.

Better yet, audition both at your AKAI dealer's soon. Or write: AKAI, P.O. Box 6010, Compton, CA 90224.

We'd hate to start the revolution without you.

<table>
<thead>
<tr>
<th>AKAI GX-77 with:</th>
<th>Dynamic Range</th>
<th>Frequency Response</th>
<th>S/N Ratio</th>
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<tbody>
<tr>
<td>EE Tape (3⅔ ips)</td>
<td></td>
<td>25-25000 Hz</td>
<td>63 dB</td>
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<tr>
<td>Conventional Tape (7½ ips)</td>
<td>25-25000 Hz</td>
<td>45 dB</td>
<td></td>
</tr>
<tr>
<td>EE Tape (7½ ips)</td>
<td>&gt;6 dB</td>
<td>25-33000 Hz</td>
<td>63 dB</td>
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Audio amplifiers are, paradoxically, both the easiest and the most difficult components to test. Easiest, because more or less universally accepted standards exist to define the tests and the conditions under which they are made (and most amplifier measurements can be made with great precision and repeatability). Most difficult, because there is a far from absolute correlation between the factors we measure and the amplifier's ultimate subjective performance. Therefore, we can measure most of an amplifier's operating characteristics with considerable accuracy and repeatability, but we are unable to tell from these measurements whether one amplifier is audibly superior to or is likely to last longer than another.

Amplifier-measurement standards have existed since 1959, when the Institute of High Fidelity's Standard IHF-A-200 was issued. Before then, there had been no generally accepted standard, and such common ratings as power output, distortion, noise level, and frequency response were (or were not) specified by each manufacturer as he saw fit. Making comparisons between amplifiers was therefore difficult, and judgments were unreliable.

The original IHF standard was revised to meet the special requirements of multichannel (stereo and quadraphonic) reproduction, and the new IHF-A-201 (1966) served the industry for the next twelve years. During that time, advances in amplifier and semiconductor technology and the widespread use of spectrum analyzers (a rarity in the 1960s and earlier) both required and made possible several more sophisticated measurements. Also during those years the Federal Trade Commission issued its ruling on advertised power ratings for home entertainment amplifiers; this radically changed rating methods and, in fact, the actual design of most amplifiers.

The current standard, originally issued as IHF-A-202 (1978), was the result of nearly three years of work by an industry technical committee on which Stereo Review Technical Director Larry Klein and I both served. With the recent absorption of the IHF by the Electronic Industries Association (EIA), the standard was renamed the EIA Consumer Products Interim Standard CPIS-2, July 1981.

In the current standard, the primary ratings for power amplifiers are continuous average power output, dynamic headroom, frequency response, sensitivity, and A-weighted signal-to-noise ratio. There are twenty-one secondary disclosures that may be specified as applicable at the discretion of the manufacturer. In our tests, we customarily limit the secondary disclosures to clipping headroom, IHF intermodulation distortion, slew factor, and sometimes reactive load and transient-overload recovery time. The last measurement is not performed on all amplifiers (we have yet to find one with an inadequate overload-recovery time), and the reactive-load test is routinely performed with a load that approximately simulates a loudspeaker but is not identical to the specified IHF load.

The measurement procedure is roughly as follows. The amplifier is first operated for one hour at one-third its manufacturer-rated power, with both channels driving 8-ohm resistive loads at 1,000 Hz and with the line voltage maintained at 120 ± 1 volts throughout the entire procedure. This is followed by five minutes of operation at rated power before making measurements. The purpose of this overkill preconditioning process (specified by the FTC as a preliminary to a power or distortion measurement and incorporated in the EIA standard) is to heat the amplifier to its maximum operating temperature; this usually (though not always) minimizes its output capability by heating the power-transformer windings and thus reducing the d.c. supply voltage.

We then measure total harmonic distortion (THD) as a function of output power from 0.1 watt until the waveform clips. Although our Hewlett-Packard 3580A spectrum analyzer is capable of reading distortion components down to less than −90 dB (0.003 percent), many amplifiers and even some receivers today have far lower distortion levels at normal power outputs. We could simply ignore them (since distortions at these levels have no audible significance), but since our test instruments are capable of going down to about −110 dB (0.0003 percent) we generally try to measure the distortion, whatever its level. This is made possible by using a Radford Series II distortion analyzer between the amplifier output and the spectrum analyzer. It nulls the fundamental component of the signal output, reducing it by 40 dB or more and correspondingly...

(Continued on page 30)
Shure supplies a replacement stylus (needle) for virtually every cartridge we've ever made.

No matter which Shure cartridge you own, from today's V15 Type IV all the way back to the M3D, the first true high fidelity stereo cartridge, you can get a Genuine Shure replacement stylus that can bring it right back up to its original performance specifications. Upgrade styli are available to fit some Shure cartridges for performance beyond original specifications.

Even as the performance of the rest of your high fidelity system can be no better than the performance of the cartridge, the performance of a fine Shure cartridge can be no better than its stylus. Cartridges don't wear out—stylus do. A worn or damaged stylus can cause irreparable damage to your valuable, possibly irreplaceable record collection. Don't take the chance! Have your stylus professionally inspected at least once a year, and replace it if necessary with a Genuine Shure replacement stylus.

Don't be fooled by cheap imitations. Sophisticated equipment designed by Shure assures uniformity and unwavering adherence to specifications. Insist on the name SHURE on the stylus grip.

Shure Brothers Inc., 222 Hartrey Ave., Evanston, IL 60204. In Canada: A.C. Simmonds & Sons Limited. Manufacturer of high fidelity components, microphones, loudspeakers, sound systems and related circuitry.

CIRCLE NO. 46 ON READER SERVICE CARD
ingly extending the dynamic range of the spectrum analyzer. The signal source, an H-P 239A sine-wave oscillator, is rated for only 0.0018 per cent distortion, but it does nearly ten times better than that. Distortion often cannot be detected at low power outputs because it is less than the also inaudible system-noise level, and we can only plot it when it becomes resolvable above the noise.

This distortion measurement is also made with 4- and 2-ohm resistive loads on the amplifier. Many amplifiers are not rated for 4-ohm operation (and hardly any for 2 ohms), but we used this a convenient way to judge the current-output capability of an amplifier (which can be important when driving a large capacitive speaker load at high frequencies). A further justification for this somewhat extreme test is the fact that the impedance of many speakers drops to between 3 and 4 ohms at some frequencies. At each load impedance, the output is measured at the point of waveform clipping. The clipping-headroom rating is this power divided by the rated output and expressed in decibels. The signal source, an H-P 239A sine-wave oscillator, is rated for roughly -90 dB referenced to 1 watt. We also measure the dynamic-headroom power output with 4- and 2-ohm loads. Sometimes this is the only way to determine how much power an amplifier can deliver to low-impedance loads, since fuses, thermal sensors, or other protective systems may limit its continuous power output while permitting brief peaks to pass. Our load resistors for these measurements are Dale 8-ohm precision resistors (1 per cent tolerance) rated to dissipate 250 watts each, and by combining them in series or parallel we can build up almost any desired load. Their power rating enables them to dissipate the output of the largest amplifiers without significant change of resistance.

The slew factor is a simple test of an amplifier's continuous-power-output capability at ultrasonic frequencies. It is based on the assumption that an amplifier whose high-frequency response rolls off more rapidly than its power response is unlikely to generate any so-called "transient-intermodulation distortion." Other tests proposed for TIM measurement are either unreasonably time-consuming or require too much special equipment to justify their use, and the slew-factor measurement does the same job very simply.

First, the amplifier is driven to its rated power output at 1,000 Hz into 8 ohms. Maintaining the same input voltage, the frequency is then increased until the output waveform becomes visibly distorted or the test is interrupted by some other effect. In the best-designed amplifiers the output often simply falls off, without visible waveform distortion, with increasing frequency until the 500-kHz upper limit of our signal source is reached. In that case, the slew factor is given as "greater than 25." The ratio of the highest frequency reached to 20,000 Hz. Sometimes the amplifier is damaged by this test, and we stop when we see smoke (literally) or when the amplifier's protection system shuts it off. Only rarely do the requested test data or the amplifier's instruction manual warn of the hazards of the test, and although it is admittedly severe and not likely to be a problem in normal use, it suggests at least one area of protection that may have been overlooked in an amplifier design.

The IHF intermodulation-distortion test (IHF-1M) is another excellent measurement of an amplifier's high-frequency linearity. Most amplifiers exhibit higher distortion at high frequencies because of the limitations of their output transistors and a reduction in the amount of negative feedback at those frequencies. Harmonic-distortion measurements may not reveal this, since the harmonics fall above the audio range and may not pass through the amplifier (or be audible even if they do).

The IHF-1M test consists of two equal-amplitude sine waves 1000 Hz apart in frequency and usually near the upper end of the amplifier's frequency range. The standard allows for a choice of frequencies and output-power levels, but we use only 19 and 20 kHz with a combined peak level equal to that of a single sine-wave signal at rated power. The amplifier output is displayed on a spectrum analyzer scanning from 20,000 to 0 any distortion products in that range are measured. A perfect amplifier, of course, would show nothing but the two high-frequency tones in its output. Usually we find some third-order distortion (at 18,000 and 21,000 Hz, although we are concerned only with the more audible lower product) and a second-order product at 1,000 Hz. There is no way of knowing how much any of these measured distortions contribute to audible distortions, but the test does show how an amplifier compares to others in its linearity and power-handling capability at the highest (frequency range. For all the distortion products to be less than -90 dB, and sometimes they cannot be detected at all (less than -96 dB).

Signal-to-noise ratio (S/N) ratings for power amplifiers are referenced to a 1-watt output into 8 ohms. This simplifies comparing S/N figures for amplifiers of different power ratings. If the amplifier has level controls, they are set so that a 0.5-volt input produces a 1-watt output. The input is terminated in 1000 ohms, and the output noise is measured through an A-weighting filter (which attenuates the low and high frequencies in accordance with their relative audibility). Our minimum voltage reading of 100 microvolts corresponds to roughly -90 dB referenced to 1 watt. I regard this as inaudible regardless of the speakers used. In fact, even a -70-dB noise level is unlikely to be heard under any real-world listening conditions.

In a subsequent "Technical Talk" column I will describe the application of the EIA amplifier test standard to the measurement of preamplifiers.

Test Reports begin on page 32
SCOTT.
The only stereo type in the family.

Michael Roberts, Vice President, Finance.
"To me, Scott speakers are a sound investment."
"I think in logical, practical terms. That's why I just bought Scott speakers. And why I've replaced my other components with Scott. Dollar for dollar, Scott products are the best buy. Their variety is enormous—speakers, turntables, receivers and complete systems. And Scott offers features found in products costing a great deal more. With Scott, you get the features you really want, without having to pay for those you simply don't need. To me, that's real value."

Ellen Roberts, sales representative.
"My Slimcom system and its 5-3-1 warranty fit my hectic lifestyle."
"My Scott system is so easy. Easy to feel comfortable with. Easy to fit into a lifestyle like mine. My company moves me around quite a bit. Next year—Phoenix. So I need a system that's dependable and durable. In that regard, Scott's quality and comprehensive warranty speak for themselves. Five years assurance on speakers, three years on electronics, one year on the turntable and cassette deck. Besides a promotion, what more could I ask for?"

Doug Roberts, engineering student.
"Scott means great engineering, superb sound."
"You can't get more out of a stereo than the engineering that goes into it. And nobody puts more engineering experience into its products than Scott. After all, since 1947 Scott has earned over 160 patents for its best ideas. And their new auto-range power meters are the latest in engineering developments. For me, Scott means great engineering and superb sound. Believe me—because no one knows engineering like I do. At least no one in the Roberts family."

Since 1947, Scott has been the only stereo type in the lives of countless families. Let Scott make the difference in your life, too. For more information, contact: Dept. D, H.H. Scott, Inc., 20 Commerce Way, Woburn, MA 01888 U.S.A. (617) 933-8800 Telex 20-0177

The Scott warranty:
Five years on speakers, three years on electronics, one year on turntables and cassette deck.

The Name to listen to:
Makers of high quality high fidelity equipment since 1947.

CIRCLE NO. 44 ON READER SERVICE CARD
Equipment Test Reports
By Hirsch-Houck Laboratories

THE new addition to the top of the Polk "Audio Monitor Series" line is the Model RTA 12B, a full-size, floor-standing 4-ohm speaker system embodying design concepts that have earned Polk speakers a reputation for quality and value. Polk uses a pair of small (51/2-inch) laminated-polymer cone drivers for the bass and much of the midrange. The drivers, which are identical, operate together up to 600 Hz; one then rolls off while the other is used up to 2,000 Hz. The two drivers are in a large enclosure with a "vent" consisting of a 12-inch flat-diaphragm passive radiator. The purely acoustic crossover between the driven and passive radiators takes place at 60 Hz. The final design of the system, including its rather complex crossover networks, was done with the aid of a Fast Fourier Transform (FFT) computer program developed by Polk. The system supplied for test came with a curve showing a frequency response flat within ±3 dB from 50 to 20,000 Hz, plus a virtually uniform phase-vs.-frequency characteristic.

The small woofer cones are located near the top of the wooden cabinet, about 28 inches from the floor, and the center of the passive radiator is 17 inches from the floor. A separate high-frequency module operating above 2 kHz is mounted on top of the cabinet. It is covered by an acoustically transparent black grille assembly and houses a 1-inch dome driver mounted on a flat metal plate. A downward-sloping ramp beginning at the lower edge of the tweeter dome minimizes diffraction effects that could impair the smoothness of the high-frequency response. With the grille in place, a ramp extension in its framework continues the antidiffraction treatment to the front of the cabinet. A separate black cloth grille covers most of the cabinet's front.

The high-frequency assembly also contains the system crossover network. Polk has chosen third- and fourth-order Gaussian filters for the low- and high-pass sections. There is some evidence from other sources that this type of filter (which is free of response ripples near the cutoff frequency) results in improved quality. Matthew Polk came to the same conclusion independently and incorporated this concept in the design of the Model 12B. Also mounted on the crossover circuits' printed board is a 0.75-ampere fast-blow fuse that protects the tweeter against damage.

The Polk 12B, including its high-frequency module, stands about 37 inches high, and it is 16 inches wide and 11 inches deep. The wood surfaces of the cabinet are finished in rosewood- or walnut-grain vinyl veneer, and (Continued on page 36)
The first time you see Pioneer LaserDisc™ in action, you’ll know it’s different.
It actually puts a picture on your TV with 40% more video resolution than home video tape. (Viewed side by side with tape, the difference is staggering.)
The first time you hear Pioneer LaserDisc, you’ll have a tough time believing your ears as well. Instead of hearing mono with that picture, you’ll hear honest-to-goodness stereo.
This combination of sight and sound creates a sensation you’ve simply never experienced at home before.
A reality of performance, a sense of “being there” that makes watching a movie or concert at home finally worth staying home for.
Having created all this picture and sound fidelity, it seemed only logical to offer pictures and sounds worth seeing and hearing. Software that would live up to the hardware. And that’s precisely what we’ve done.
Academy Award winning movies like Ordinary People, The Godfather, Tess, Coal Miner’s Daughter.
Comedies like Airplane, Animal House, Cheech and Chong.
When you have the ability to play back in stereo, it makes sense that you offer music. So there are movie musicals like Grease, Saturday Night Fever, All That Jazz. There are Broadway shows like “Pippin.” And there are concerts with Paul Simon, Liza Minnelli, Neil Sedaka, even the Opera.
The sight and sound experience of Pioneer LaserDisc is so remarkable, it seemed to demand a larger scale. Which led us to introduce the Pioneer 50” Projection TV.
The experience is more like being at the movies than like being at home. In fact, for the first time seeing a concert at home offers a
THEN THE BEST PICTURES.

picture that's every bit as large as the sound. As for the picture quality, well, just look at the picture of Liza below. Hard to believe, it's an actual picture taken right off the screen.

But with Pioneer LaserDisc you don't just sit back and watch. For example, with the "How to Watch Pro Football" disc, you can go backwards, forwards, in fast motion, slow motion, stop motion, study it one frame at a time.

There are discs that teach you golf, tennis, cooking, step-by-step. Then there's The First National Kidisc. For the first time, children learn at their own rate. Unlike television, the disc responds to them. Your kids will love it so much they won't even know they're learning.

The only way to believe all this new technology is to see it. And we've arranged it. Just call us at 800-621-5199 for the store nearest you. *(In Illinois, 800-972-5855.)*
real walnut wood veneer is available. Each speaker weighs about 75 pounds. Because of the staggered crossover frequencies for the 5½-inch drivers (which are mounted in physical symmetry), the speakers are designed to be used in mirror-image pairs and are therefore designated as left and right speakers. Price: $1,000 a pair.

- Laboratory Measurements. We measured the frequency response of the Polk 12B speakers in two ways, using a reverberant-field measurement at a distance of about 12 feet and a quasi-anechoic FFT measurement at 1 meter with our INDAC analysis system. The latter measurements were compared to FFT response data run by Polk on the same units, and the correlation was very close. We found a variation of about ±4 dB from 50 to 17,000 Hz (the latter being the upper limit of the analysis system) in the FFT readings. The averaged and smoothed room-response curves combined with a close-miked swept-frequency measurement of the woofer response (in which the outputs of the driven and passive cones were combined with corrections for their relative areas) yielded a composite response curve of ±4 dB from 20 to 20,000 Hz. The midrange and high-frequency portion of the curve from 500 to 20,000 Hz was very uniform. A slight "bump" in the response at 250 to 300 Hz was visible in both Polk's and our data. It did not contribute in any obvious way to the sound character of the speaker.

The high-frequency tweeter response was nearly identical when measured on axis or some 30 degrees off axis, attesting to the excellent dispersion of the dome tweeter. The bass distortion (a close-miked measurement) was very low at a 1-watt input (based on the speaker's nominal 4-ohm impedance). It was between 1 and 2 per cent from 100 to 32 Hz, rising to 2.5 per cent at 30 Hz. Increasing the power to 10 watts resulted in much higher bass distortion, between 3 and 7 per cent over the same frequency range.

The impedance of the Polk 12B was less than its rated 4 ohms between 100 and 1,500 Hz, measuring about 3 ohms over much of that range. Maxima of 12 to 15 ohms were measured below 20 Hz as well as at 54 and 3,500 Hz. Most amplifiers should have no difficulty driving these speakers, but very few would be able to handle a second pair (of any impedance rating) in parallel with them. The sensitivity of the 12B was 87 dB sound-pressure level measured at 1 meter when driven by 2.83 volts of random noise in an octave band centered at 1,000 Hz. In this respect the 12B is comparable to some of the less-sensitive vented systems or the more-sensitive acoustic-suspension systems.

- Comment. For best results, the Polk 12B speakers should be mounted in the clear, well away from any room walls. We placed them about 3 feet in front of the wall for our measurements and listening tests. The sound of the 12B was pleasingly uncolored and balanced. They seemed to excite fewer of the room-response modes than some other high-quality speakers in a roughly similar placement. Despite their very strong bass response, these speakers were never heavy-sounding. The middles and highs were as neutral as we have ever heard in a listening room, matching very closely the sound of some of our more expensive reference speakers. The overall effect was of an open, full, and effortless sound, the kind that encourages simply listening to the music and forgetting about the hardware.

Although the protective system of the Polk 12B consists only of the tweeter fuse, it proved to be adequate for the function. On one occasion, when checking a CX decoder, we played silent grooves on an encoded disc at a very high gain setting in an effort to hear any record noise. This is not an advisable procedure, since the first notes of the recorded section drove our 200-watt-per-channel amplifier into hard clipping for a few seconds. The only damage, beyond the upset to our ears, was the blown fuses on the 12Bs. Nothing else was damaged in any way. The speaker's power specification of 10 to 500 watts per channel (amplifier rated output) seems to be a realistic one.

Our first exposure to Polk speakers was when we tested the Mini-Monitor a couple of years ago (STEREO REVIEW, August 1979). Prior to that, we had heard a number of complimentary opinions of Polk speakers from others. Our initial experience with the Mini-Monitor showed us why that was so, and this test of the 12B reinforces our impression that Polk offers an uncommon amount of superior sound at a moderate price.

Polk is a small company, but the combination of good "sound sense" and a high degree of technical expertise and sophistication has resulted in some really noteworthy products. Polk calls the "Real Time Array Reference Monitor Model 12B" (to give it its full name) "the finest loudspeaker that Polk manufactures and one of the best in the world." We would be inclined to agree. A $500 speaker is not going to make its way into every home, but on the other hand one can pay several times as much and not get significantly better sound (or even do as well).

Circle 140 on reader service card

---

**ADC Astrion Phono Cartridge**

The Astrion is ADC's current "top of the line" cartridge, combining advanced design features with hand assembly and test procedures. Like most other ADC cartridges, the Astrion is an induced-magnet transducer. A newly developed "Orbital Pivot System" reduces the moving mass of the stylus system compared to that of some other designs. No armature wires or adhesives are used in the Astrion armature, which employs a precision armature pivot, which is a compliant suspension block. The stylus cantilever is a laser-etched solid-sapphire rod whose high stiffness-to-mass ratio (compared to other materials used for this purpose) minimizes flexing problems and helps to place the stylus resonantly.

(Continued on page 38)
Creating great music has never been simple. Now recreating it is.

Degree in engineering? Swiss bank account? All you need to get startling cassette deck performance is Aiwa's startling cassette deck... the 3-head AD-3500. Its performance and convenience will bedazzle your senses. For the ears, there's Dolby C. So you hear the music, not the tape. For the eyes, 24 section, tri-color bar meters. While for the touch, Aiwa adds all-electronic soft touch controls. For easy maintenance, try Aiwa's A.D.M.S. It automatically demagnetizes the heads so you don't have to. The AD-3500 even replays music over again, automatically. Aiwa's AD-3500. It does more than reproduce music. It recreates it. Simply

Aiwa introduces 3-head and Dolby C performance with auto-demagnetizing and auto-replay convenience.
In the graph at left, the upper curve represents the frequency response of the cartridge. The distance (measured in decibels) between it and the lower curve represents the separation between the two channels (anything above 15 dB is adequate). The inset oscilloscope photo shows the cartridge’s response to a recorded 1,000-Hz square wave, which indicates resonances and overall frequency response (see text). At right is the cartridge’s response to the intermodulation-distortion (IM) and 10.8-kHz tone-burst test bands of the TTR-102 and TTR-103 test records. These high velocities provide a severe test of a phonograph 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 recorded-signal groove velocity that the phonograph 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 whose average recorded groove velocities are much higher than about 15 centimeters per second.

In our tracking tests, the Astrion was able to track at forces between 1 and 1.4 grams (nominally 1.2 grams). The frequency response is specified as 20 to 20,000 Hz ± 1 dB. The channel separation rating is 30 dB at 1,000 Hz and 20 dB at 10,000 Hz, and the tracking ability is stated to be 30 cm/sec from 3,000 to 10,000 Hz and 21 cm/sec from 400 to 3,000 Hz.

The cartridge load was the recommended 1.2 grams. Increasing the force to 1.4 grams including the 5.7 grams of the cartridge and that increasing it to 1.4 grams is unlikely to make any worthwhile improvement in the sound quality.

Subjective listening tests with the Shure "Audio Obstacle Course" records (at 1.2 grams) showed that the Astrion could play through level four of every band on either the ERA III or ERA IV record without difficulty. However, the highest level of most of the selections on these records produced some audible strain—evidence of incipient mistracking, although we never heard any definite "hard" mistracking.

The tracking distortion was measured at middle frequencies with the Shure TTR-102 test record (intermodulation distortion with frequencies of 400 and 4,000 Hz). The distortion was in the 1 to 2 per cent range for velocities under 20 cm/sec, increasing rapidly above 22 cm/sec with a 1.2-gram force and above 25 cm/sec with a 1.4-gram force. High-frequency distortion was measured with the shaped 10.8-kHz tone bursts of the Shure TTR-103 test record. The distortion readings rose from 0.7 to 2.7 per cent as the velocity increased from 15 to 30 cm/sec. This is fairly typical performance for a good phonograph cartridge.

The square-wave response of the cartridge with the CBS STR 112 test record showed a couple of cycles of low-level, well-damped ringing on the leading edge of the 1,000-Hz square wave, but its shape was otherwise excellent. The low-frequency response in the fairly massive arm (about 26 grams including the 5.7 grams of the cartridge itself) was at about 8 Hz.

**Laboratory Measurements.** The ADC Astrion, installed in an ADC low-mass magnesium headshell, was mounted in a medium-mass (S-shaped) tone arm for testing. The vertical force was set at 1.2 grams. The cartridge load was the recommended 47,000 ohms in parallel with 300 picofarads (pF). The effect of other capacitance values was also measured.

The frequency response and crosstalk were measured with the CBS STR 100 test record. The frequency response was an almost perfectly straight line, sloping slightly downward with increasing frequency (the 20,000-Hz output was about 2 dB less than the midrange level). The peak-to-peak irregularities in the response curve did not exceed about 0.5 dB, however, making the Astrion one of the smoothest and "flattest" cartridges we have yet tested. Further checks with JVC and B&K test records showed the usual differences between records, with the former being flatter to 10,000 Hz and falling off more rapidly above that frequency, while the latter was almost perfectly flat to 18,000 Hz.

A lower load capacitance (170 pF) resulted in a very slight upward tilt in the high-end response (about 1 dB at 20,000 Hz compared to the 10,000-Hz level), and a high load of 400 pF raised the output in the midrange by about 1 dB and rolled it off to about -3 dB at 20,000 Hz. We judge that the effects of load capacitance would be negligible in most listening situations.

The channel separation was 25 dB in the midrange, increasing to a maximum of 30 to 35 dB at 6,000 Hz and falling to 10 or 12 dB in the 15,000- to 20,000-Hz range. The output of the cartridge was moderately high—about 4.25 millivolts—with the two channels matched within 0.4 dB. The measured vertical stylus angle was a relatively high 30 degrees.

In our tracking tests, the Astrion was able to play the high-level, low-bass tones on one of our test records and the 70-micrometer level of the German Hi-Fi Institute test record at 1.2 grams. Increasing the force to the rated maximum of 1.4 grams improved the latter capability to 80 micrometers and enabled the cartridge to play the 30 cm/sec 1,000-Hz tones on another record without visible waveform distortion (there was some peak clipping at the lower force). From these tests, we conclude that 1.2 grams is a perfectly satisfactory operating force for this cartridge and that increasing it to 1.4 grams is unlikely to make any worthwhile improvement in the sound quality.

**Comment.** As might be expected from its ruler-flat frequency response and excellent inter-channel symmetry, the ADC Astrion was an unusually neutral-sounding cartridge. Some cartridges, because of a peaked or rising high-end response, may have a crisp or slightly bright sound. Other
Yamaha gives you the silent treatment.

Yamaha's K-960 cassette deck with dbx® gives you what you listen for—music. All the music. With none of the tape noise. The highs without the hiss. The midrange and bass with nothing missing except the noise.

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There are also full-logic transport controls, fluorescent meters, optional remote control unit, your choice of silver or black finish and, of course, Dolby® noise reduction.

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ers, with an elevated output in the lower midrange, may be noted for their warmth (or "presence," if the output emphasis is at a sufficiently high frequency). The ADC Astrion has none of these qualities, so that when we played the best records at our disposal through speakers noted for their lack of coloration, the end result was the kind of music one can enjoy for hours on end without being reminded that it originates on a record.

A few cartridges can track higher recorded velocities in certain frequency ranges than the Astrion, but we doubt that it will ever be overtaxed by any record other than the few special test records we used for the tracking tests (these records, designed to stress a cartridge beyond its normal limits, have higher velocities than those of commercial music pressings). The Astrion's combination of high output, virtual independence of output load conditions, extreme flatness of frequency response, and uniformity of crosstalk response is noteworthy. Together with its low tracking pressure (its special tip shape distributes the already small tracking force over a wider area of the groove wall than the usual elliptical stylus), these factors make it one of today's better cartridges and one of which ADC can justifiably be proud.

Circle 141 on reader service card

ALTHOUGH ADS was one of the first to market a truly hi-fi miniature speaker system, it is better known for its more conventional, larger systems. The company obviously had the technological base to produce a "three-piece" speaker system (two small satellite speakers and a bass module) some time ago, but it was reluctant to rush to market with a product whose performance might be seriously compromised by incorrect installation or setup adjustments.

ADS has now overcome those possible objections to its own satisfaction, and the result is the new SS2300 "SubSat" system. It is based on the ADS L400, a "mini" speaker of excellent quality that is capable of being used as a full-range speaker system. The L400 is a 4-ohm, two-way acoustic-suspension system with a 6-inch woofer that crosses over at 1,500 Hz to a 1-inch dome tweeter. It is housed in a fine-finish wooden cabinet (available in either oak or walnut veneer) with a black metal grille. The speaker measures 11 1/2 inches high, 7 1/2 inches wide, and 6 3/4 inches deep.

The rated frequency response of the L400 satellites is a very impressive 60 to 20,000 Hz ±3 dB. Its low-frequency performance allows a crossover to a common-bass system at a frequency sufficiently low to prevent the bass response from appearing as a "disembodied sound" and the bass module itself from being identified as a separate sound source. Although the size and appearance of the L400 permit it to be installed almost anywhere, a recommended placement is on the optional F400 floor stand. This unobtrusive black metal stand supports the speaker 29 inches off the floor and tilted slightly backward for optimum coverage of the listening area.

The bass range of the SS2300 system is handled by a self-powered module, the PB1500. It contains a pair of 10-inch acoustic-suspension woofers in acoustically isolated compartments and a pair of 100-watt amplifiers. The amplifier rating is based on the 4-ohm impedance of the bass drivers. The PB1500 is large and heavy, measuring 22 1/2 inches wide, 23 1/2 inches deep, and 16 inches high. It weighs about 90 pounds and is available in wood veneers to match those of the L400s. A black grille cloth covers the speakers, and a similar (nonremovable) grille is on the opposite side of the box for decorative purposes. The amplifier heat (Continued on page 44)
WHY SPEND $200 MORE ON A BETTER TAPE DECK WHEN ALL YOU NEED IS $2 MORE FOR A BETTER TAPE.

No matter how much you spend on a tape deck, the sound that comes out of it can only be as good as the tape you put in it. So before you invest a few hundred dollars upgrading your tape deck, invest a few extra dollars in a Maxell XL-I-S or XLII-S cassette.

They’re the most advanced generation of oxide formulation tapes. By engineering smaller and more uniformly shaped oxide particles, we were able to pack more of these particles onto a given area of tape. Now this might not sound exactly earth-shattering, but it can help your tape deck live up to its specifications by improving output, signal-to-noise ratio and frequency response.

Our XL-S cassettes also have an improved binder system, which helps keep the oxide particles exactly where they’re supposed to be. On the tape’s surface, not on your recording heads. As a result, you’ll hear a lot more music and a lot less distortion.

There’s more to our XL-S tape than just great tape. We’ve also redesigned our cassette shells. Our Quin-Lok™ Clamp/Hub Assembly holds the leader firmly in place and eliminates tape deformation. Which means you’ll not only hear great music, but you’ll also be able to enjoy it a lot longer.

So if you’d like to get better sound out of your tape system, you don’t have to put more money into it. Just put in our XL-S tape. IT’S WORTH IT.
Nobody does it better.

Winsto

This is your world.
This is your Winston.
Taste it all.

KING: 15 mg. "tar", 1.1 mg. nicotine,
100's: 15 mg. "tar", 1.0 mg. nicotine, av. per cigarette by FTC method.
The SS2300 would not be able to meet its designers' goals of independence from the vagaries of room interaction and other unpredictable factors without the help of the C1500 control center furnished with the PB1500. This is a sophisticated electronic crossover network—and much more. A knob on its front panel selects crossover frequencies of 72, 90, 115, and 145 Hz with 12-dB-per-octave slopes. A BASS LEVEL control adjusts the acoustic output of the PB1500 to match that of the L400 speakers (which are driven from the regular system amplifier). Normally the C1500 is connected between the preamplifier and power amplifier of the main system. Alternatively, it can be placed in a tape-monitor loop whose amplifier of the main system. Alternatively, it can be either opened or closed by a switch on the C1500. The other C1500 controls are pushbuttons, which are adjacent to the phase control. The defeated switch takes the C1500 and PB1500 subwoofer out of the circuit entirely. When it is pressed, the satellites receive the full program bandwidth and the PB1500 is silenced. This is a convenient way to evaluate the total sound of the subwoofer to the overall sound without disturbing any of the other system adjustments. The DYNAMIC BASS EXTENDER is controlled by two buttons. One activates the circuit, which boosts the lowest frequencies with a curve complementary to the natural bass rolloff of the PB1500 woofers. This provides several decibels of additional output in the frequency range from about 80 to 20 Hz (centered at about 30 Hz) together with a sharp infrasonic cut to eliminate rumble or other noises that could cause overload damage or simply sound objectionable. When the 22/37-Hz button is pressed, the maximum acoustic boost occurs at about 50 Hz and the low-frequency cutoff is more rapid. This is most likely to be useful with popular or rock music, while the 22-Hz position is best with most classical music.

The nomenclature of the DYNAMIC BASS EXTENDER derives from its being controlled by the level of the bass signal. As the level increases toward the point of overdrive of either the bass amplifier or the speakers, the boost is progressively reduced until at high volume levels it is effectively gone. Thus, it can be left in operation at all times without risking damage to the speakers or producing an audible difference.

The other C1500 controls modify the specific shape of the crossover curves, although each has a center detented setting which will be suitable in most cases. The Hi-Pass control is intended to compensate for the bass-rolloff characteristics of the satellite speakers (particularly if they are not ADS L400s). It boosts or cuts the output slightly in the crossover range to correct for either an overdamped or underdamped bass resonance in the satellite's "woofer." With the L400s, this control can be left centered. The BASS CONTOUR control is a shelving-type tone control designed to complement the characteristics of the PB1500 and L400 speakers. In some rooms it may be desirable to modify the bass response of the SS2300 system, and this is often best done with the contour control rather than the usual amplifier tone controls (although both have essentially similar functions)

The other C1500 controls are pushbuttons. There is a power switch with an adjacent pilot light and a TAPE MONITOR button. The defeat switch takes the C1500 and PB1500 subwoofer out of the circuit entirely. When it is pressed, the satellites receive the full program bandwidth and the PB1500 is silenced. This is a convenient way to evaluate the total sound of the subwoofer to the overall sound without disturbing any of the other system adjustments. The DYNAMIC BASS EXTENDER is controlled by two buttons. One activates the circuit, which boosts the lowest frequencies with a curve complementary to the natural bass rolloff of the PB1500 woofers. This provides several decibels of additional output in the frequency range from about 80 to 20 Hz (centered at about 30 Hz) together with a sharp infrasonic cut to eliminate rumble or other noises that could cause overload damage or simply sound objectionable. When the 22/37-Hz button is pressed, the maximum acoustic boost occurs at about 50 Hz and the low-frequency cutoff is more rapid. This is most likely to be useful with popular or rock music, while the 22-Hz position is best with most classical music.

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The other C1500 controls are pushbuttons, which are adjacent to the phase control. The defeated switch takes the C1500 and PB1500 subwoofer out of the circuit entirely.
FEEL THE BEAUTY THAT IS MCS

MCS presents the outstanding beauty and performance of a complete matched stereo ensemble, engineered for component compatibility. Shown here, our 45-watt* amplifier, stereo tuner with digital frequency readout, cassette deck with Dolby® and metal tape capability, two 3-way speakers, quartz lock direct-drive turntable and audio rack. See it, hear it, touch it, feel it. Purchase the complete MCS ensemble and save 280*. The package 999**

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*45 watts RMS min per ch, 2 ch. driven at 8 ohms
20-20000 Hz with not more than 0.05% THD
Prices higher in Alaska, Hawaii, and Puerto Rico
MCS Series Audio Components sold exclusively at JCPenney
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The distortion of the PB1500 could not be measured in the usual manner, since we had no access to the drivers. We drove it through the CI500 (90-Hz crossover) with 2 volts at 100 Hz for the CI500 input. This corresponds roughly to a 1-watt drive to the L400s and was therefore used as an equivalent reference for the bass unit. The distortion was an excellent 0.5 per cent or so from 100 to 50 Hz, rising to 4 per cent at 30 Hz. A 10-dB level increase produced a room-shaking bass output and distortion measuring 1.5 to 2.5 per cent down to 60 Hz and 10 per cent at 37 Hz.

**Comment.** We listened to the ADS SS2300 system with the F400 stands about 3 feet from the facing wall of the room and 4 feet from the sides. The PB1500 was located at one side about 5 feet in front of the right speaker and 12 feet from the left speaker. The system was driven by a 200-watt-per-channel amplifier, with the CI500 control between the preamplifier output and power-amplifier input.

The balance, smoothness, and transparency of the sound from the SS2300 system was superb, to say the least, and easily comparable to what we have heard in the same room from some of the finest conventional speaker systems. The small size of the L400 satellites gives them a real "imaging" advantage over some larger systems, since cabinet interference with the polar response of the speaker is minimized. This could be appreciated when we used image enhancers such as the Carver "Sonic Hologram," which functions best with speakers having a uniform phase response and symmetrical polar response in the horizontal plane. The ADS system worked excellently with the several such signal processors that we tried.

We have had very good results with several other "three-piece" speaker systems that use passive crossovers between the satellites and the bass module. However, most of these systems cross over at about 150 Hz, and under some conditions the position of the bass module can be identified by ear or the homogeneity of the sound can be disturbed by "disembodied bass." This is rare in our experience, but it does happen. The 90-Hz crossover of the SS2300 appears to eliminate that problem. Switching off the satellites leaves only a deep bass originating from the PB1500, which is never heard as a distinct sound source while the complete system is operating. The bass level can be set to the listener's taste over a very wide range from disco to symphonic balance. We adjusted the various bass controls until the music's low-bass foundation could just be heard (or felt), but without imparting any heaviness to male voices. Of course, more bass was readily available, to the point of rattling every loose object in the room. We also noted that with the DEFEAT button engaged (the L400s operating as full-range speakers), the sound was still excellent, often (in the absence of low-bass energy in the program) indistinguishable from the sound of the full system.

The installation and operating instructions of the SS2300 are quite complete and well illustrated. The confirmed "knob twiddler" can devote as much of his time as he wishes to adjusting the system response, but we found the center setting of most of the controls to be completely satisfactory. And our experience also suggests that the subwoofer placement is extremely noncritical, particularly remarkable considering the amount of trimming of bass response that the CI500 control unit makes possible.

As three-piece systems go, the ADS SS2300 definitely ranks among the best, and possibly at the very top. It is far from cheap, but the visual appearance and acoustical performance of the system are certainly commensurate with its price. For installations where the room decor cannot accommodate large and visible speakers but where no compromise with sound quality can be tolerated either, the ADS SS2300 may well be the ideal speaker system.

Circle 142 on reader service card

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**Crown FM Two Tuner**

The Crown FM Two is an FM tuner of advanced design whose compact dimensions and appearance complement those of the company's Straight Line Two preamplifier and Power Line Two power amplifier. Because of their unified design, the three components can be "stacked" in a single optional walnut cabinet to form a "receiver" of outstanding quality. The FM Two is only 1 3/4 inches high, with a satin-finish silver-color front panel fitted with handles. The panel is 19 inches wide and the tuner is 11 3/4 inches deep; it weighs approximately 9 1/2 pounds. Price: $599.

The Crown FM Two is a digital-synthesis tuner whose reception frequency is shown on a large fluorescent digital display in the
Chances are, if you've never received an engineering degree from MIT—or even if you have—you still haven't the vaguest idea which of the over 200 different cassette decks to buy. Well, there's an easy way to find out.

Record absolutely nothing on each one. If you hear something like a snake hissing in the background, that recorder is filled with ten-year-old technology. But if you hear exactly what you recorded—silence—then the recorder reflects the technology of the 80's. And it does, if it's the TC-FX6C from Sony.

Sony designed the FX6C to incorporate the newest, most advanced noise reduction system—Dolby C.* Dolby C doubles the noise reduction without producing the unwanted side effects caused by similar systems. So when you record music you hear only the music and not an extraneous hiss.

TO FIND OUT HOW FLAWLESS A SONY REALLY IS, TRY RECORDING SILENCE.

FEATURES AND SPECIFICATIONS: 2-motor tape drive/Solenoid-logic, feather-touch controls, 9-segment LED meters, Optional: RM-50 remote control, RM-80 wireless remote control, RM-85 synthesizers. 5.5 mm steel SNRB (metal) Dolby off improved up to 20dB @ 2KHz with Dolby C. "Wow and flutter 0.04% tWRMS)/Frequency response 30Hz-17kHz .t 3dB (metal). "Dolby is a trademark of Dolby Lab. CI981 Sony Corporation of America 9 West 57th St., N.Y., NY 10019. Sony is a registered trademark of Sony Corp.

And, instead of the conventional tape counter, the FX6C features the most useful guide to tape time ever invented—a computerized Linear Counter. Now you no longer have to guess how much time remains on a tape, or if you'll run out of tape in the middle of a selection.

There's no fumbling around to find, play and replay a cut you want to hear either, because the FX6C incorporates an Automatic Music Sensor. This allows you to skip forward or backward to the selection of your choice. You can even preset the deck to repeat any portion of the tape you want to hear up to nine times.

Other innovations range from Sony's exclusive Sendust and Ferrite head formulation to advanced remote-control capability.

But what's really innovative is the price. A price that, we assure you, will generate a lot of hissing from our competitors.

SONY: We are music.

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center of the panel. The bright 1/2-inch-high numerals are readable from a considerable distance and can be dimmed by a front-panel switch if desired. To the right of the display are two flat momentary-contact SCAN/TUNE buttons and a SCAN LOCK button. With the latter out, holding either SCAN/TUNE button down causes the tuner to scan in the selected direction (up or down in frequency) in steps of 200 kHz, corresponding to North American channel assignments for FM. Export versions are set up at the factory for the channel spacings (such as 50 kHz) used in other parts of the world. A momentary touch on a SCAN/TUNE button will cause the frequency to step by one channel width.

If the SCAN LOCK is engaged, a single touch on a SCAN/TUNE button will cause the tuner to scan until it acquires a signal above the muting threshold, where the tuning stops and the FM Two unmutes. At the right side of the panel are a MEMORY button and six PRESET buttons. A station frequency can be stored in any of the memory locations by pressing MEMORY (which lights an amber indicator above that button) and then, within five seconds, pressing the desired PRESET button. The station can be recalled instantly at any later time by touching that button. A constantly energized separate power supply in the tuner keeps the memories "alive" when it is not in use, and a very large internal capacitor (0.47 farad) returns sufficient charge to support the memories for at least five days with no power available to the tuner.

To the left of the frequency-readout window (which also reveals a five-segment signal-strength readout and a stereo indicator) there are six round pushbutton switches. In addition to the power switch (with an adjacent red light), these include an FM de-emphasis switch (75- or 25-microsecond characteristics), a stereo-noise filter that blends high frequencies to reduce hiss on weak signals, a MUTE switch, a STEREO/MONO switch, and the fluorescent-display DIM switch. With all the buttons in their "out" positions, the tuner is set up for normal operation.

The rear of the Crown FM Two contains the audio-output jacks, each with its own level control, and a coaxial connector for the 75-ohm antenna input. For installations using a 300-ohm antenna system, a 300- to 75-ohm balun matching transformer is supplied with the tuner. There is also a small REMOTE connector whose function is not mentioned in the otherwise complete instruction manual.

The circuitry of the Crown FM Two is unusual in several respects. The "front end" has three cascaded J-FET f.i. amplifiers whose seven tuned circuits give the tuner exceptional immunity to overloading by strong signals plus excellent image rejection. The first f.i. is at 10.7 MHz, with linear-phase (constant group-delay) ceramic filters that make possible the tuner's very low distortion rating of less than 0.05 per cent for both stereo and mono. There is a second conversion to 1.96 MHz, the operating frequency of the pulse-counting digital detector, which not only eliminates any alignment or drift problems in that part of the tuner but has an inherently wide bandwidth that accommodates excessive transmitter deviation without a significant increase in distortion. Although crystal-controlled frequency synthesizers are no longer as a novelty in consumer-oriented tuners, the circuit in the FM Two operates rapidly and smoothly, and with no idiosyncrasies.

- Laboratory Measurements. The 75-ohm antenna input of the Crown FM Two was driven through a resistive network that matched it to the 50-ohm output impedance of our Sound Technology 1000A signal generator. The "dBf" notation of the tuner test oscillator is rated at 0.1 per cent and has an actual residual distortion of about 0.06 per cent.

The IHF intermodulation distortion of the Crown FM Two was measured by modulating the signal generator 100 per cent with equal amplitudes of 14,000 and 15,000 Hz. A spectrum analysis of the audio output showed a second-order distortion product at 1,000 Hz that was some 70 or 71 dB below 100 per cent modulation at that frequency. The third-order distortion (at 13,000 and 16,000 Hz) was -51 dB in mono and -54 dB in stereo relative to the 14,000- and 15,000-Hz tone levels. As with stereo FM tuners, there were a number of low-level intermodulation products in the stereo mode, but since their levels were all between -65 and -80 dB, they were certainly not audible.

The tuner's actual sensitivity in mono was perfectly flat from 30 up to several thousand hertz, rising slightly to +2.5 dB at 15,000 Hz. In spite of this very flat high-end response, the 19-kHz pilot carrier leakage in the audio output was at a barely measurable -80 dB level. The internal hum was -64 dB (mostly 120 Hz) relative to 100 per cent modulation. The channel separation was better than 40 dB over the full range of 30 to 15,000 Hz, and it was about 52 dB over most of the midrange. The maximum audio output from a 100 per cent modulated signal was about 2.5 volts, and at the minimum setting of the output-level control it was just under 1.0 volt.

Other measured FM tuner characteristics included a capture ratio of 1.6 dB at 45 dBf and 1.25 dB at 65 dBf; AM rejection was 70 and 72 dB at those input levels. The alternate-channel selectivity was a very good 81.5 dB, and the adjacent-channel selectivity was 8 dB. The image rejection was excellent at 92 dB, and the muting threshold was 20 dBf.

- Comment. Although there were some minor differences between the measured performance and the published ratings of the Crown FM Two, most of them were easily explainable by differences in test equipment and setup. The Crown FM Two is clearly a superior tuner with consistently excellent performance where it really matters—distortion, noise, and interference rejection. Its wide-band digital detector not only has very low inherent distortion but is also unaffected by an occasional overmodulation peak that could create a burst of distortion from a conventional tuner using a quadrature detector.

Although the sound quality one achieves in FM reception is more likely to be determined by the broadcast signal than by the tuner, we noted that the Crown FM Two

(Continued on page 50)
Loran™ is the cassette of the future... but it's here right now. The original and only heat-resistant cassette shell and tape that withstands the oven temperatures of a car dashboard in the sun. Testing proves that even TDK or Maxell cannot take this kind of punishment.

With Loran, you'll capture a full range of sound as you've never heard it before. Tape that delivers magnificent reproduction of highs and lows, along with an exceptionally low background noise level. Super sensitive with an extremely high maximum recording level capability. That means you can record Loran at high input levels for greater clarity. As a matter of fact, we recommend it.

Because of our cassette shell, Loran tape can stand up to being accidentally left near a source of excessive heat in your home or in your car. It is indeed the finest quality tape available today.

Loran™ has exclusive features not available on any other cassette. Safety Tabs™ (patent pending) prevent accidental erasures. But unlike other cassettes, you can restore its erase and record capabilities simply by turning the Tab screw a 1/2 turn. Our Hub Lock (patent pending) secures the tape to the hub in such a way that the harder it is pulled the tighter it's held.

With all these features, it's no wonder Loran was selected as "one of the most innovative consumer electronics products..." by the Consumer Electronics Show Design and Engineering Exhibition.

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WHEN ALL OTHERS FAIL...LORAN CASSETTES ARE SAFE AND SOUND SENSATIONAL.
delivered a uniformly high-quality output from practically any signal we could hear in our suburban New York location. On one occasion, forty-four stations were receivable with an indoor folded-dipole antenna at ground level, and thirty-five of them were heard in fully quieted stereo. Switching to mono produced a fully quieted mono output from eight of the remaining stations, leaving only one that was still marginal under this deliberately extreme listening arrangement. The tuning and scanning were completely noise-free, the output of the tuner being muted until the program emerges with no thumps or noise bursts.

We noted with approval that Crown did not attempt to add AM capability to the FM Two. The AM sound from combination tuners is so consistently mediocre (to put it charitably) that its inclusion could only have degraded the user's perception of this fine product. In our view, an excellent FM tuner should not be compromised by including a poor AM tuner, and a good AM tuner (which is perfectly possible, though rare) is likely to be at least as expensive as a good FM tuner.

The Crown FM Two, certainly a fine component for any music system, is ideal for use with matching Crown components. The combination of elegance and performance of such a grouping, though hardly inexpensive, would be difficult to match in any other way.

Circle 143 on reader service card

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### Carver C-1 Preamplifier and M-500 Power Amplifier

**THE Carver C-1 Sonic Holography Preamplifier** is basically a conventional high-quality control center, but its nomenclature gives a clue to its major point of difference from any competitive products: it incorporates the latest form of the signal-processing circuit introduced by Carver in the C-4000 control console. Omitted from the C-1 are the "Autocorrelation" noise-reduction and peak-unlimiter features, as well as the time-delay system and its power amplifiers (all part of the C-4000).

The C-1, in addition to being much more compact than the C-4000, is considerably less expensive. Like the C-4000, it has separate bass and treble tone controls for each channel, with switchable turnover frequencies (8 or 2 kHz for the treble, 40 Hz or "loudness" for the bass). The control contours have been designed to provide maximum utility to the listener, with a limited amplitude of control range and asymmetrical boost and cut characteristics. The Carver C-1 is 19 inches wide, 3½ inches high, and 10 inches deep. It is available in two versions: in an all-black finish with the panel edges slotted for rack mounting and in a pale-gold finish without the rack-mounting provision (both units have handles). The C-1 weighs 6 pounds.

In addition to the four tone-control knobs on the front panel, there is a headphone jack (driven by its own amplifier), an input-selector knob, a small balance knob, and a large volume control. The program sources include two magnetic-phono inputs (PHONO 1 for conventional moving-magnet or moving-iron cartridges, and PHONO 2 with 25 dB additional gain for moving-coil cartridges). The PHONO 1 input impedance is 47,000 ohms, with additional amounts of input capacitance (0, 180, or 390 picofarads) selectable by a slide switch in the rear of the unit. This makes it easy to match the input of the preamplifier to almost any phono cartridge. The PHONO 2 input is terminated by 39 ohms. The other input sources are identified as tuner, aux 1, and aux 2.

The other front-panel controls are small rectangular pushbuttons. A group of six controls the Sonic Hologram, silences the speakers for headphone-only listening, and switches the power to the C-1. The Sonic Hologram controls, besides turning the circuit on and off, select different internal operating conditions whose significance is explained in the instruction manual.

The other front-panel buttons form a row below the tone-control knobs. They include tone bypass, low- and high-frequency turnover selectors, two tape monitor switches, and two dub switches that cross-connect the tape decks for copying from either one to the other. There is also an external processor button that can be used to put a signal-processing accessory (equalizer, expander, etc.) in the signal path.

On the rear of the C-1 there are phono jacks for all signal inputs and outputs, including two pairs of main outputs. In addition to the switchable phono capacitance, there is an infrasonic filter button that inserts a 12-dB-per-octave rolloff below 15 Hz in the phono-preamplifier section. Three of the six a.c. convenience outlets are switched, with a total maximum rating of 500 watts. Price: $500.

A new Carver product (an ideal companion to the C-1, though not related to it) is the M-500 Magnetic Field power amplifier. Employing the same basic design as the cube-shaped M-400 amplifier (tested in the October 1980 issue), it is styled more conventionally, with a front panel 17½ inches wide, 4½ inches high, and 13½ inches deep. Optional rack-mount adaptors are available, and these increase the width of the panel to 19 inches. The M-500 (Continued on page 52)
There's only one way to play it...

Wherever the music is hot, the taste is Kool. Because there's only one sensation this refreshing.
Laboratory Measurements. The Carver C-1 preamplifier required 55 millivolts (mV) at its high-level inputs for a reference output of 0.5 volt. The phono input sensitivity was 0.9 mV (phono 1 was not measured). The A-weighted output noise from any input was less than our measurement limit of 100 microvolts, or 74 dB below 0.5 volt. The phono preamplifier clipped with 93 milliamps input at 1.000 Hz, and the equivalent clipping voltages at 20 and 20,000 Hz were 90.5 and 81.6 mV, respectively. The phono input impedance was 46,000 ohms in parallel with a capacitance of 20, 175, or 370 pF, depending on the setting of the switch in the rear of the unit. The output waveform from the preamplifier clipped at 5.5 volts.

The preamplifier frequency response measured through the high-level inputs was down 0.4 dB at 5 Hz and 0.5 dB at 20,000 Hz, with a -3 dB point of 50,000 Hz. The infrasonic filter reduced the response at 20 Hz by only 0.3 dB, but it was down 2.9 dB at 15 Hz and 21.2 dB at 5 Hz. As claimed, the tone-control response curves were highly asymmetrical, with a maximum low-frequency boost of 17.5 dB but a cut of only 5 dB. At high frequencies, the maximum boost was 8 to 12 dB at 20,000 Hz, with a maximum cut of about 5 dB. The turnover-frequency selector buttons had the stated effect. The loudness position of the bass button enables the bass tone control to give approximately correct loudness compensation curves unaffected by the volume control setting. The 40-Hz turnover actually gives a sliding turnover frequency affecting the response below 200 to 400 Hz near the maximum boost setting. The tone controls in their cut settings provided a flat shelf-shaped curve, with each control affecting almost half the audio bandwidth.

The RIAA phono equalization was flat within ±0.5 dB from 50 to 20,000 Hz, and it was +1.5 dB at 20 Hz. It was barely affected by the inductance of typical phono cartridges, which boosted the output above 12,000 Hz to about +1 dB at 17,000 Hz and +2 dB at 20,000 Hz.

The harmonic distortion of the C-1 was extremely low—well under 0.01 per cent for outputs up to 3 volts and at frequencies up to 10,000 Hz or even higher. It reached a maximum at 20,000 Hz, where we measured 0.013 per cent at 2 volts and 0.018 per cent at 3 volts. Although we measured the effect of the Sonic Hologram circuit on frequency response, it can be properly evaluated only through critical listening.

The Carver M-500 power amplifier is, by any standards, impressive. Although its top cover (over the heat sinks) became very hot during the preconditioning period and even hotter during full-power tests, the amplifier was able to withstand this treatment without the excessively frequent shutdowns (by its protective system) that made testing the earlier M-400 such a frustrating experience.

With both channels driven to clipping level, even into 8-ohm loads, the 15-ampere line fuse of the amplifier blew (our 15-ampere bench fuses would certainly have blown if the amplifier fuse had not blown first). As we noted in reviewing the M-400, it is characteristic of the Carver "magnetic-field" amplifier design that it draws very large currents from the power line at high power outputs. Since this current is largely 90 degrees out of phase with the voltage, it does not represent power consumption (the kind you pay for!), but it can blow fuses very easily. Because of this, we were forced to depart from our regular test procedure and complete our high-power tests with only one channel driven.

An input of 97 mV drove the amplifier to a reference output of 1 watt, and its A-weighted noise output was 86 dB below that level. The 1,000-Hz clipping level was 288 watts. Into 4 ohms it was 400 watts, but with 2-ohm loads the protective relay shut the amplifier down at 85 watts. The 8-ohm IHF clipping headroom was 0.61 dB. Using the 20-millisecond tone-burst signal of the IHF dynamic-power test, we measured a maximum output of 290 watts into 8 ohms, 403 watts into 4 ohms, and 142 watts into 2 ohms, giving an 8-ohm IHF dynamic-headroom rating of 0.64 dB. (In a conversation subsequent to our test, Carver stated that the amplifier did have a reasonably large headroom, but the frequency of the test signal we used did not disclose it.)

The 1,000-Hz harmonic distortion into 8-ohm loads was less than 0.0004 per cent up to 10 watts, rising smoothly to 0.0014 per cent at 100 watts, 0.002 per cent at 200 watts, and 0.003 per cent at 280 watts. It was generally similar when driving 4-ohm loads, the distortion rising from 0.0003 per cent (our test-equipment residual) at 10 watts to 0.0022 per cent at 300 watts. Although the amplifier was obviously not (Continued on page 54)
IT'S AN UNUSUAL PERSON WHO WOULDN'T HAVE A PROBLEM CHOOSING BETWEEN SONY'S NEW HEADPHONES.

To state it simply, there's no other complete line of lightweight headphones that offers the quality, the comfort or the value of the new Sonys.

In fact, there is no other line of lightweight headphones as complete as Sony's.

On this gentleman's first left ear is the secret of the Walkman's "great sound"—the new MDR-4T. It's so incredibly advanced it can make any portable stereo sound even better.

Next he's listening to the MDR-50T. The successor to the headphones that started the lightweight revolution. It has a wider frequency range than last year's model. The result: significantly better sound.

Then comes the MDR-80T. Its driver technology is light-years ahead of anything you've ever heard. Listen to it and it's like being inside the most esoteric hi-fi system.

And they all feature Sony's exclusive "Unimatch" plug that works with any stereo unit, home or portable.

Audition the whole line at your Sony dealer. Then if you still have difficulty choosing between them, we can't blame you. We had one heck of a time finding a person who didn't.

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meant to drive 2-ohm loads, even under that severe condition the distortion was only 0.0018 per cent at 1 watt, 0.0066 per cent at 50 watts, and 0.4 per cent at the clipping point of 85 watts.

At rated power, the distortion of the M-500 was typically between 0.002 and 0.01 per cent from 20 to 5,000 Hz, rising to 0.037 per cent at 15,000 Hz and 0.11 per cent at 20,000 Hz. At half power and one-tenth rated power, the characteristic was similar but with lower distortion readings (respectively, 0.026 and 0.013 per cent at 20,000 Hz). It should be noted that the 0.11 per cent distortion reading at full power and 20,000 Hz was made with a null-type distortion analyzer and includes a number of low-level distortion and noise components above the audio-frequency range. The other readings were made with a spectrum analyzer that allowed us to measure only the harmonic distortion components. Since we noted that the full-power, high-frequency operation of the amplifier generated a number of ultrasonic components, we found it more convenient to make a "THD + N" measurement at that point.

The actual high-frequency linearity of the M-500 was very good, as shown by its IHF intermodulation-distortion measurement with 19,000- and 20,000-Hz signals. The third- and fifth-order distortion products were, respectively, 90 and 94 dB below 250 watts, and the second-order (1,000-Hz) distortion was completely undetectable down to our measurement "floor" of -95 dB. The IHF slew factor was 2.5 because the amplifier's protective relay shut it off at 50 kHz when it was driven by a "full-power" input signal. The low-level frequency response was flat from 10 to 1,000 Hz, down 0.2 dB at 20,000 Hz, and reached -3 dB just below 100 kHz.

Although it has no bearing on the performance of the amplifier, we also checked the accuracy of the power meters (on most amplifiers a cosmetic feature of dubious accuracy). Both meters were essentially alike and surprisingly accurate, reading within 10 per cent of the actual power output delivered to an 8-ohm load from their minimum reading of 0.01 watt to a full 200 watts or more. At least as important was the rapid response of the meters, which read correctly on 20-millisecond tone bursts with a 0.5-second repetition period. Their decay time was relatively slow, so the meters gave a constant and informative display of the amplifier's power-output variation with complex-program waveforms.

- Comment. The Carver C-1 offers the audiophile an opportunity to experience the effects of the Sonic Hologram at about half the price of the C-4000 control center by sacrificing a few signal-processing abilities (which might well be duplicated elsewhere in a well-equipped system). Its general signal-modification abilities (the tone controls and infrasonic filter) are relatively subtle though highly effective in comparison with the sometimes heavy-handed approach taken by the designers of some amplifiers and receivers. Used in moderation, they can adjust the perceived frequency response and balance of a music system to one's taste with little risk of doing violence to the overall integrity of the sound.

In essence, the Sonic Hologram operates by embedding a portion of each channel's program to the other, with appropriate time delays and phase shifting, in such a manner that (ideally) each ear hears only the contribution of its corresponding speaker. This is not unlike the situation existing during headphone listening, although the subjective effect is completely different. Essentially, it takes the form of a widening of the apparent sound source so that it extends beyond the spatial limits set by the speakers (both laterally and in depth) and in some cases causes the sound to wrap around the sides of the room and extend well toward the rear.

The effect is both impressive and exciting to experience, but it is obtainable with full effect only at the price of extremely critical speaker location and listening posture. In its original form it could be heard properly by only a single person at a time, although a diluted effect was present over much of the room. The "second-generation" system used in the C-1 (and in current models of the C-4000) is not quite so critical with respect to listener location or that set-up, but it still requires a careful setup to obtain best results. We also noted that the tendency toward bass heaviness in the early Sonic Hologram has been effectively eliminated.

The instruction manual for the Carver C-1 presents a most informative discussion and explanation of the Sonic Hologram. Although the procedure to be followed in setting up the system may seem discouragingly complex, it is well worth the effort! Aside from this feature, the C-1 is a superb preamplifier and control center, priced quite competitively even without consideration of its special features. In view of the growing popularity of moving-coil phonograph cartridges, the ability to use one without a sizeable investment in a separate head amplifier or transformer is a strong "plus."

The M-500 power amplifier carries on the tradition of the original M-400 by offering an unprecedented number of clean watts per dollar. The earlier unit proved to be extremely rugged and reliable in our severe testing program, and the M-500 is, if anything, even better protected. It will turn itself off before any damage can occur, whether due to overdriving, insufficient load impedance, high temperatures, or any other incorrect operating condition. Even if it is played at high levels, the M-500 is one of the coolest-running amplifiers we have used.

The Magnetic Field amplifier can be considered a conventional amplifier with a very fast, smart power supply that can adjust its output voltages almost instantaneously to the requirements of the signal waveform. Since even at high home listening levels most power amplifiers are called upon only for a few watts of average power, the M-500 is virtually "loafing along" most of the time, using very little power from the a.c. line and dissipating almost no heat. When more power is required (usually for very brief periods), it is instantly "on tap" for demands of up to hundreds of watts without the usual penalty of a large, heavy, hot, and expensive amplifier most of whose capability is hardly ever used.

Although we could hear traces of buzzing from the power supply of the M-500 under certain test conditions (this is caused by vibrations of the core laminations in its magnetic-field coil), it was never in evidence in normal use, and we doubt that it would ever be heard in an operating music system.

In summary, the new Carver products reflect an evolutionary process by which a new technology is gradually applied to a variety of products, usually with cost and/or performance benefits to the consumer. They are obviously excellent values for the money, and our tests confirm that they are top performers by any standard.

Circle 144 on reader service card
For over 25 years, the Harman Kardon legend has been built on dedication to a single objective.

Musical truth.

From tape decks and turntables to receivers and separates, Harman Kardon represents the ultimate in sonic quality.

And pictured above is the ultimate in Harman Kardon electronics.

The hk775X2 dual mono amplifiers were created for the music lover who demands the sonic improvements that come from assigning separate high-powered* amplifiers to each stereo channel. Among the many leading design concepts they incorporate are three of particular note.

1. High Current Capability allows the hk775X2 to deliver nearly unlimited instantaneous power under heavy, low impedance loads. Low frequency transients, such as the beat of a kick drum, are reproduced with their tight, solid attack and full dynamic power completely intact.

2. The use of Low Negative Feedback puts total TIM distortion at less than .007% for noticeably smoother, dramatically more open highs.

3. Ultrawideband frequency response keeps phase shifts well outside the audible spectrum, for an incredibly transparent, solid stereo image.

The hk725 preamplifier has an 8-stage phono section with an impressive .009% THD. It uses Ultrawideband and Low Negative Feedback design and FET front ends on both low and high level stages.

Finally, the hk715 offers Digitally Synthesized Quartz-Locked tuning for accuracy and 8 presets for convenience.

Like all Harman Kardon components, the hk700 series achieves its extraordinary openness and depth through attention not only to bench test specs, but to how the designs sound while reproducing music.

Because ultimately, what must sound real is the music.

For your nearest dealer, call toll-free, 1-800-528-6050, ext. 870.


*130 watts RMS per amplifier, into 8 ohms, 20Hz-20kHz, with less than .03% THD.
Your future may hinge on this decision!

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In the course of one year and up to 800 hours of concentrated study and hands-on experience, you will learn about the business, the laws, ethics and economics of the industry. You will learn about recording, engineering, electronics, studio maintenance, synthesizers, audio/visual production techniques, and much more! No wonder 80% of our graduates have found jobs within the industry! Call or write for full information to:

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Going on Record

By James Goodfriend

The Home Music Store

Social and economic changes often come not from the invention of new technologies but from the joining of two or more relatively recent technologies and their application to a specific field and a specific set of circumstances. The latest example is something called "The Home Music Store" (a trademarked name), a creation of the Digital Music Company of Washington, D.C.

The Home Music Store joins the technology of digital recording with that of satellite transmission, applies them to a set of circumstances that includes the existence of cable television lines and the ubiquity of cassette tape recorders, and focuses on the matter of selling not records, but recorded music.

It works this way. Suppose you already subscribe to a cable television service; you then also subscribe to The Home Music Store, and you get, for your approximately $9 extra per month, a black box. This box feeds not your television set but your stereo set, and it gives you, to begin with, five stereo channels of continuous music, twenty-two hours per day, transmitted digitally via satellite to your local cable company and fed by it (still digitally) into the black box, which decodes the signal for your amplifier.

The five channels are, respectively, rock, country-and-western, MOR pop, jazz, and classical and shows, and the selections are all back-announced at lengthy intervals—that is to say, you won't know what's coming or when so you won't be likely to tape it illegally.

You will also get for your money a monthly catalog of available records and listings of when they can be sampled on a completely separate sixth music channel. This "preview" channel gives you only excerpts from the albums, announced in advance with voice-overs and transmitted in mono rather than stereo. Its purpose is to allow you to sample specific records but to discourage you from taping the sample.

Now we have reached the crucial point. You find in the catalog an album that interests you—perhaps you hear part of it on the preview channel—and you decide you would like to own it. You call up the toll-free number and talk to The Home Music Store's computer, telling it your subscriber number and the number of the album selection you want to buy. The computer then notifies your black box that it is authorized to give you that selection (and that one only) and, at a predetermined time, which is listed in the catalog, the black box feeds that selection through one of two recording channels, transmitted digitally and in stereo, into your system. If you've remembered to put a blank C-90 cassette into your machine you will own a copy (up to forty-five minutes) of the recording. You are then billed for this service by mail or credit card at a price about 40 per cent lower than the list price of the record album; you supply your own cassette.

In addition to the music you have ordered, your cassette has also been imprinted with your serial number, inaudible to you but detectable with the use of special playback equipment. This is there so that if you have any idea of running off a couple of hundred copies of your legitimately recorded cassette, they can be traced directly back to you. This is meant to be a legitimate operation, not an aid to piracy. The composers get paid, the artists get paid, the record companies get paid, the cable people get paid, and The Home Music Store (theoretically, at the moment) makes a profit. And all this is possible because there is no physical product to manufacture, warehouse, ship, sell, and try to collect for.

Will it work? The Digital Music Company thinks so, and a test marketing is in the offing. Yes, but will it work? Ah, that's a different question. If this is to be our brave new world, how are we going to like it?
LX-5...under its beautiful satin-silver and black-matte exterior lies a recorder of true Nakamichi heritage—a full-feature monitoring "Discrete" 3-Head machine of superlative quality. Behind its hinged panel are controls for three tape types, Dolby* B- and C-type noise reduction, memory and unattended operation—even Bias Tune to elicit best performance from each tape.

And what performance! Response from 20 to 20,000 Hz, 70-dB dynamic range with Dolby-C NR, distortion under 1%, and inaudible flutter! Reproduction of such incredible clarity and detail that it simply is unattainable with conventional technology; it demands the perfection of Nakamichi magnetic heads and our unique Asymmetrical, Dual-Capstan, Diffused-Resonance transport—microprocessor controlled to feature Auto Play, Punch-In Recording, and remote operation.

Experience the beauty of form that reflects the beauty of performance—the LX-5—now at your Nakamichi dealer.

Simplicity of Form...Excellence of Performance

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For more information, write Nakamichi U.S.A. Corp., 1101 Colorado Ave., Santa Monica, CA 90401
The new Kenwood computerized AM/FM receiver and cassette deck.

We've married two of our most sophisticated audio components into one space-saving unit that makes beautiful music a lot easier to make. And even easier to afford.

The KRX-7 Computerized Cassette Receiver.

With all its computer controlled functions, the KRX-7 can do remarkable things with cassette tapes. Like automatically fast forward or rewind to any cut you tell it. Play the same cut over again. Or even the same side. As many times as you want. It even handles metal tape.

With its computerized receiver, the KRX-7 also has the intelligence to make AM/FM listening easier. It can automatically find the next station on the dial, and lock it in perfectly. It's even smart enough to locate your 10 favorite stations at the push of a button.

For great performance without a great deal of complications, see the new KRX-7 computerized cassette receiver at your Kenwood dealer. And ask about its matching Kenwood turntable, 3-way speakers and system rack. The easy way to put a stereo system together. And keep it all in the same great sounding family.

For the Kenwood dealer nearest you, write Kenwood, P.O. Box 6213, Carson, CA 90749.
"The best loudspeaker for the money."

The New York Times

Stereo Review calls the AR 9 bass "deeper, flatter and cleaner than that of any other we have tested." High Fidelity calls the AR 28s "one loudspeaker that will satisfy the discriminating listener long after the others have lost their charm." And the American Record Guide calls the AR 18s "the best loudspeaker for the money I've found anywhere near $100." Now hear for yourself. See your local AR dealer.


Hear what you've been missing.
Audio's BLACK BOXES

A Family Tree by David Ranada

Illustrated © 1981 by Anita Karl
Ivan Berger’s Buyer’s Guide to

SIGNAL PROCESSORS

How can “black-box” equalizers, imagers, noise-reducers, signal-delay units, and the like help you realize your sound ideal?

If it weren’t for several generations of audio perfectionists, we might still be listening to acoustical recordings played through morning-glory horns. But thanks to those perfectionists, we listen today to (sometimes) excellent recordings played through the kind of sophisticated equipment displayed on (practically) every other page of this magazine. And we’re still not satisfied. There’s always something more that can be done to make up for the recording engineer’s omissions (or to correct the studio’s sins), to make our rooms sound more like concert halls, to remove noise, or even just to tinker a bit with the sound so it is more to our liking. The means to all these laudable ends are a number of “black boxes” (they are often anything but black) that you can plug into your system to get it to do that “little something extra.”

Much of what the separate black boxes do can also be done by some standard components that incorporate their functions. But the black-box approach lets you accomplish your end with your present equipment.

Image/Ambiance Enhancers

Bob Carver’s “Sonic Hologram Generator” circuit, originally built into the C-4000 preamplifier but now available as the C-9 black box for $279, is designed to spread the stereo image out beyond the confines of the plane between the speakers and to clarify the position of individual voices and instruments within the stereo field. Hard on the heels of the Carver preamplifier came other imaging devices designed as stand-alone “black boxes.” Sound Concepts and Omnisonix were among the first. Sound Concepts’ IR2100 Image Restoration Control ($249) has a handheld control unit that can be adjusted from the listening position. The Omnisonic 801 Imager ($199), a conventional black box designed for placement with other system components, is now being joined by the new Model 905, which offers variable dimensioning and a “staging” circuit designed to control position and perspective of the stereo image.

Omnisonix has an imaging device for the car as well, the Omnisonic 801A ($150). Russound’s 1H-1 imager is about to hit the market too. Phase Linear’s Model 180 Dimensional Sonic Lo-calizer ($150) is designed primarily to reduce “center-of-the-head” spatial effects in headphone listening, but it also enriches both mono and stereo speaker sound. JVC’s BN-5 Biphonic Processor ($280), on the other hand, promises to produce “binaural” effects through ordinary speakers, another way of addressing the sound-localization problem. Yamaha’s latest receivers incorporate spatial-image circuits too. All imaging devices work on the stereo “space” in which the performers are arrayed. But that’s just half the story, for there’s also the space of the listening room to be considered. A more familiar class of add-ons—“delay” or “reverb” units—works on that space, appearing to enlarge it to a sonic size more appropriate to the musical performance by supplying the delayed echoes typical of larger auditoriums. Today’s delay systems mostly use solid-state, “bucket-brigade” (BBD) or charge-coupled devices (CCD) which play back through separate speakers at the sides or rear of the room for clarity and natural ambiance effects. Audio Pulse and Sound Concepts were among the pioneer producers of these devices, but they’re since been joined by ADS, Advent, Benchmark Acoustics, Bose, Bozak, Koss, Nikko, Phase Linear, Pioneer, SAE, Sansui, and Sony.

Some of these units, such as the ADS 10 ($1,150 with speakers) and the Koss K-4DS ($430) have built-in amplification for their extra speakers. That’s not too costly an addition, for very little power is required, and delayed-sound levels should be kept low in any case. But for those who already have spare amplifiers (or four-channel systems with rear-channel amps), most delay units have just preamp outputs. Extra speakers for delay systems needn’t be expensive either. Since low-bass information is essentially non-directional, the delay system’s bass response is not extremely important (some delay units even roll it off), making it possible to use inexpensive speakers or satellite-type minispeakers.

Most of the units being offered are “delay” rather than “reverberation” systems—that is, the signals they deliver to their speakers are essentially the same as those coming from the front speakers, but delayed by fractions of a second to simulate distant echoes. Since most recordings already contain some natural reverberation from the hall or studio in which they were recorded, that delayed signal will then contain many echoes of its own for a natural effect.

Reverberation systems such as Ken-

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THE BLACK BOX
“FAMILY TREE”

The Black Box Family Tree on the facing page is meant only as a general conceptual guide to available signal processors, which is why the branching stops just short of naming actual products. Since the three main branches (frequency response, imaging, and dynamic range) are all perceptual, subjective categories, it should come as no surprise that any signal processing taking place on one of the branches could result in perceptual changes on another. An obvious example of this is the variable high-frequency filters used as noise-reduction devices. They reduce noise by carefully altering frequency response according to the demands of the program material. A more subtle change would be the change in imaging caused by the use of equalization. Such effects vary greatly with the program material and the other components in the system (especially speakers and listening rooms).

—David Ranada
wood’s RA-80 ($179), Pioneer’s SR-303 ($195), and Sansui’s RA-700 ($190), by contrast, create multiple delays for a denser echo pattern. So does Sansui’s RG-7 ($260) and Technics’ SH-8030 ($420), both of which also incorporate equalizers (see below). And Sony’s SEH-310 “Hybrid Graphic Equalizer” ($250) combines reverb with an equalizer, an image enhancer, and a microphone mixing input in the bargain.

The aborted introduction of four-channel reproduction paved the way for today’s delay systems by familiarizing us with the idea that ambiance from extra speakers could truly enhance a system’s sound (the Nikko and Sound Concepts units even have switching for quadraphonic inputs). Owners of matrix-type four-channel systems (QS or SQ) found that even ordinary stereo records were often enhanced by the accidental ambiance added when they were played back through matrix decoders. Some decoders even included switch positions designed for optimum ambience with non-quad recordings. Four-channel discs in the SQ-matrix format continue to trick onto the market, but only one decoder for them is now available, the Audionics Space and Image Composer ($1,275). A decoder for a newer matrix system, Ambisonics, is available from IMF Electronics for $650, and about sixty Ambisonic-encoded discs are available, most of them British.

Equalizing the Environment

If home listening rooms don’t have the ambiance of concert halls, they don’t have concert-hall frequency response either. Equalizers, today’s most popular sound processors, are designed to compensate for that as well as for frequency variations in your system’s (usually your speakers’) sound. They can also be used as super tone controls to help rebalance recorded sound to fit your tastes.

There are about forty brands and more than eighty models of equalizers on the market, so there’s quite a variety to choose from. The most popular equalizers are ten-band “octave” graphic types with ten individual sliders, each controlling sound levels in a frequency band one octave wide. (The positions of the sliders form a rough “graph” of the frequency equalization curve you’ve set, hence the name “graphic.” Some, from ADC, Akai, Fisher, Pioneer, and others, even have LEDs set into the tip of each slider to make the “curve” visible in the dark.) Graphic equalizers are available with any number of bands from five (fairly common) to thirteen, as well as in “one-third-octave” models with three bands per octave for a total of twenty-seven to thirty-one bands. (White Instruments even makes a one-sixth-octave unit for professional use.)

Graphic equalizers aren’t the only type available, though. There are also “parametric” equalizers (from Sony Esprit, Superex, Phoenix Systems, Phase Linear, and SAE). Instead of separate controls for each of the frequency bands, these usually have fewer, often overlapping, bands whose width and center frequency, as well as the degree of boost or cut, can be varied. Examples include two-band models from SAE ($300, $400, and $650, the latter with ten equalization-curve memories and a port for control by a computer); a $1,750 three-bander from Sony’s cost-no-object Esprit line; and four-band models from SAE ($700), Superex ($450), and Phoenix Systems ($99 kit, $150 wired). Onkyo and others also offer switch-selectable center frequencies on their lowest and sometimes highest bands.

The third type, the “semi-parametric” or “paragraphic” equalizer has multiple bands with adjustable center frequencies: ADC’s Sound Shaper Three IC ($500), Crown’s EQ-2 ($1,195), and Superex’s GEM-4 ($210). Others provide adjustable widths and frequencies: Phase Linear’s Model 1100 Series Two ($595), Sony’s Esprit SE-P900 ($1,750), and Technics’ SH-9010 ($200).

Even the common graphic types include some surprises. For example, while most graphic equalizers have equally spaced control bands, Audio Control, Cerwin-Vega, and Superex make models with unequal spacing. In Cerwin-Vega’s GE-3 ($550), the bands are spaced one-half octave apart at bass frequencies below 250 Hz (where listening rooms usually need equalization most), but are spaced an octave apart above that point. Audio Control’s 520B ($125) has octave bands at 36, 60, and 120 Hz, plus additional controls at 1,000 and 15,550 Hz, while Superex’s similar GEM-2 has controls at 3, 128, 240, 1,600, and 15,000 Hz.

The newest variant is the automated equalizer, so far sold for home use only by dbx and Sansui. The dbx 20/20 ($1,500) is the more elaborate of the two, with ten bands of equalization and enough memory to store optimum equalizations for each of ten listening positions or equipment combinations. Sansui’s SE-9, with four memories and eight bands, costs considerably less ($700).

Both of these automatic equalizers are built around spectrum analyzers.
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which read the system’s frequency response through microphones placed at the listening position (they feed this information both to the auto-EQ circuits and a visual display). The same sort of analyzer can be used for manual frequency-response settings, and it is therefore built into such equalizers as Audio Control’s C-101 ($599), JVC’s SEA-80 ($600) and SEA-60 ($320), and Sansui’s SE-8 ($400). Separate analyzers, which can be used with almost any equalizer, are available from ADC ($230), Audio Control ($399), Crown ($2,295), Rotel ($400), Soundcraftsmen ($499), Phase Linear ($670), and H.H. Scott ($620).

Aids are available to help with the tricky task of equalization. Soundcraftsmen’s Scan-Alyzer equalizers have lights that can be balanced for correct frequency response in each band, and Audio Control’s D-11 ($229) generates octave-wide tones so you can measure response in each of its ten bands on the built-in meter.

Equalizers have their uses in recording as well as in playback. If you run a signal through an equalizer en route to your recorder’s inputs, you can create special effects or simply tailor a tape’s sound for special circumstances (such as overcoming road noise or acoustical problems in your car). You can connect any equalizer this way, but most new models have switches to simplify the process; if you intend to use your equalizer in taping, make sure you get one with this feature (a few preamplifiers provide the necessary switching). Some even have dual tape monitors (with dubbing connections in many models). JVC’s SEA-70 ($400) and SEA-60 and the Technics SH-8020 ($390) have reverse-response switches so you can record with one frequency curve, then get its exact inverse for playback.

If you’re in the market for an equalizer, decide early on whether you want it for sonic correction or to use as a more elaborate tone control. The more controls it has the more suitable it is for the former purpose, the less suitable for the latter.

**Bass Boxes**

Not everyone needs the full-range frequency control an equalizer provides. Many are concerned only with bass-reproduction problems, and there are plenty of devices around which deal only with the bass. Audio Control’s Richter Scale ($249), for example, is a specialized bass equalizer with five bands spaced half an octave apart from 31.5 to 125 Hz, plus a pink-noise source adjustable to match each control band and a meter to show sound-system response. It also has an infrasonic filter (found in most Audio Control equalizers), a circuit which sums bass from both channels to reduce rumble, a low-frequency boost (designed to be used with the infrasonic filter to prevent speaker overload), and provisions for use as a subwoofer crossover.

Allison’s Electronic Crossover ($290) also combines low-frequency boost with infrasonic filtering. Three selectable boost curves are designed to extend the flat response of various Allison speakers down to 20 Hz, but the unit also works well with some other speakers, especially acoustic-suspension types.

The dbx 110 “Boom Box” ($249) is a bass device that works on a different principle. Based on the fact that many recordings (especially popular ones) lack true low bass, it samples signals in the 50- to 100-Hz octave and adds octave-lower “subharmonics” to whatever tones it finds there.

Most of these devices are designed to help you hear sounds which should be audible but aren’t. If your only low-frequency problem is an excess of inherently inaudible infrasonics, there are infrasonic filters available from Ace, VSP Labs, and Symmetric Systems. Ace offers four models: the 4000, with 18 dB/octave filtering below 20 Hz ($99); the 4000-X24, with 24 dB/octave filtering ($132); and two models with 12 dB/octave filtering above 20 kHz, the 4100 ($109) and the 4100-X24 ($142). While the Ace filters are no longer available as kits, Symmetric System’s products are, with the filter unit going for $50 in kit form, $85 assembled. VSP’s HPF 102 ($189) is a factory-wired, 24-db/octave filter with switch-selectable cutoff frequencies of 20, 30, 40, and 60 Hz, plus a switchable boost of 6 dB at 55 Hz.

**Dynamic Range and Noise Reduction**

One of the critical parameters distinguishing hi-fi from lo-fi is dynamic range, the distance in decibels between the lowest sound that can be heard above the noise and the loudest that can be produced before distortion becomes audible. For those who don’t find the fi high enough or the dynamic range sufficiently wide, there are two other types of add-on signal-processors: dynamic-range expanders and noise reducers.

In noise reduction, the choice of systems has broadened dramatically in the past few years. For a long time, the only contenders were Dolby-B and dbx, but now they’ve been joined by Hi-Com, Super-D, Dolby-C, and CX (plus, in Canada, Toshiba’s “Adres” system.) Dolby-B has become so universal a
**SIGNAL PROCESSORS...**

feature in cassette recorders that it has almost disappeared as an add-on. But for Dolby-C, you can get Sony's NR-500 ($190) with simultaneous encode/decode for use with three-head tape decks. Nakamichi's NR-200 ($450) is similar, but it permits Dolby-B recording and playback as well. Also available is the NR-100 ($230), designed specifically for use with Nakamichi's 700ZX, 700ZXL, and 1000-ZXL decks, from which it gets its power and properly calibrated levels. Rotel's RN-560 accessory noise reducer ($250) also has both Dolby-B and -C.

Decks with dbx noise reduction built in have appeared in recent years, and for those with other decks, dbx offers a series of processors. Lowest priced of these is the $109 Model 21; strictly for playback, it is designed mainly for use with dbx-encoded records. For $219, the Model 222 offers encoding or decoding, but not both at once, which makes it most suitable for two-head tape decks. The Model 224 ($299) allows simultaneous encode/decode monitoring, and the Model 128 ($499) does all of that and also provides variable compression and expansion for dynamic-range control.

Telefunken's High-Com system is available in two forms here: Aiwa's HR-50U ($225), which uses Telefunken's original single-band system, and Nakamichi's High-Com II ($400), which divides the frequency spectrum into two bands and then processes each independently. Both Fisher and Sanyo offer yet another system, "Super-D," which claims a whopping 40 dB of noise reduction without "breathing." Fisher's $350 NR500 and Sanyo's $300 Plus N55 have simultaneous encode/decode switching for three-head tape decks. Sanyo's Plus N33 (also $300) is for use with two-head decks, but it also incorporates an input mixer.

CBS's new "CX" noise-reduction system is strictly for CX-encoded disc playback. A limited number of discs are available now from CBS, with more to come from RCA, the Warner/Elektra group, and others; CX-encoded videodiscs will also be available in both the LaserVision and CED (RCA) lines. Decoders are available from Audionics ($125), MXR ($100), Phase Linear ($100), and Sound Concepts ($100). The Sound Concepts unit can also be switched to function as an expander for non-CX recordings.

Prospective buyers should be aware that any complementary encode/decode systems such as those discussed above have three common characteristics: (1) recordings must be made with the proper encoding for decoding to work, (2) encoding makes them at least partially incompatible with playback systems that can't decode them properly, and (3) the best any of these systems can do is keep noise from building up in recording and playback—they can't remove any noise already in the signal at the time it was recorded.

There are, however, three systems which can reduce noise regardless of where it entered the signal path and whether or not it carries noise-reduction encoding (it must be decoded if it does, though). KLH's DNF1201A ($379) and Advanced Audio's DNR-500 ($110 in kit form, $180 wired) also combine expansion with single-ended noise reduction. These systems deal mainly with continuous noise sources such as tape hiss. A few years back, there was a mini-boom in gadgets to eliminate transient clicks and pops as well. With KLH's and Garrard's click suppressors at least temporarily out of production, SAE's 5000A click and pop filter ($225) seems to have the field all to itself.

Expanders (and compressors) affect dynamic range a bit differently. Instead of merely lowering the noise floor, expanders make all soft sounds—signal and noise alike—softer and all loud ones louder. Since recordings and broadcasts have been compressed somewhat on their way to you, this can restore some of the excitement of live musical performance to your living-room playbacks by making the dynamics you hear more of a match for those the performers originally produced.

So why compression? It's handy if you have to get a wide-range signal through a narrow-band medium—using high-grade audiophile discs as background music on your videotapes, for example. It's also handy if you want to make tapes to be played in noisy environments, such as poorly insulated cars or outdoors. If you're listening late at night without headphones, it lets you bring soft passages up to listenable levels without waking everyone in the neighborhood. And since only a few component values need be changed to turn most expanders into compressors, this extra capability adds very little to a processor's cost.

Expanders/compressors units ("companders," for short) are available from dbx (four models, from $239 to $799) and MXR ($160). Expander-only units, without compression, are made by MXR ($327), Pioneer ($195), RG Dynamics (three models, priced from $255 to $449, which also offer peak limiting and image enhancement), and Symmetric Systems ($60 kit, $95 assembled). They are also part of the Heathkit AD-1706, the Symmetric Systems Audio Signal Restoration Unit, and the Sound Concepts CX decoder mentioned previously.

**THIS MONTH'S COVER**

The two silver "black boxes" on our cover this month both combine functions commonly found in separate signal-processing accessory units. Sony's SEH-310 Hybrid Graphic Equalizer (top) contains a nine-band equalizer, a Space Sound imaging circuit, a spring reverberation system (adjusted with the Echo knob), and a microphone preamp and mike/line mixer. Technics' SH-8030 Space Dimension Controller has a five-band equalizer, two microphone inputs (one with a pan pot), mixing between microphones and line or a phono input, and a time-delay reverberation system with an adjustable stereo imager.

450 ($200) work by rolling off high frequencies when there's no appreciable signal content in the treble, restoring flat response again when legitimate highs are present. Logical Systems' Dynamic Noise Filters ($129 for the Model 318 kit, $199 for the assembled Model 8800) work similarly, while the company's Model 8801 ($289 assembled) filters rumble as well as hiss dynamically. Phase Linear's 1300 AV ($250) has input switching for use with both video and audio systems; this is especially useful, for videocassette soundtracks have poor signal-to-noise ratios.

Phase Linear also makes another type of after-the-fact signal cleaner, the Model 1000 Series Two ($450). This uses "autocorrelation," a system in which filter gates are opened to pass the harmonics of fundamental tones in the music but closed to frequencies that have no corresponding fundamentals (also, there's some expansion for increased dynamic range). Heathkit's AD-1706 ($255 in kit form) and Sym-
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The Ring: Die Walküre, Siegfried, Götterdämmerung. Made in Germany, by EMI. Only $40.00 I2949901

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Franklinanged (Donald Kagan) conducted the first important Historical Monument recordings of the Mozart Symphonies. Made in Germany, by EMI. Only $49.95 I2949246

The Who: Collection: Phases. The Who's albums from 1965 to 1977. As a whole they are available for the first time in the U.S. "not" prices are for comparison only, based on the suggested list price for comparable items.
In the two years since our last round-up of high-technology discs ("A Dozen Digital Demo Discs," January 1980), the so-called "audiophile" branch of the record industry has grown considerably. For instance, a quick glance at the disc listings in this new New Year's survey reveals that digital recording is well on its way to becoming the way to make a master tape—at least in classical music and jazz, where the demand for multichannel facilities (and subsequent remixing) is less severe. Furthermore, some of the large U.S. record companies, perhaps inspired by financial and public-relations pressure from the audiophile community, seem finally to be ready, willing, and (sometimes) able to make a low-noise, defect-free pressing.

High-quality analog-mastered recording isn't dead either. Pop productions depend on multichannel (sixteen and up) recorders and the ability to overdub and remix, but these capabilities are not yet generally available in the digital format at prices most studios or artists can afford. Half-speed remastered discs (at least those covered below) originate from analog master tapes, some of quite ancient vintage. In fact, the sound quality of all remastered recordings, no matter how high the technology employed in their production, depends ultimately on the quality of the original master tapes, and some of them sound extraordinarily good.

What will you hear from this selection of some of the past year's best-sounding audiophile discs? Technically, you'll hear generally lower levels of disc surface noise, lower distortion (sometimes as a result of lower cutting levels), and, from a few digitally mastered discs, a wider dynamic range than is usual on records. From some labels you'll also be getting better packaging of those delicate grooves—double jackets and plastic inner sleeves. (The best inner sleeves are the type supplied by CBS Mastersound, Mobile Fidelity, Varèse Sarabande, and JVC. The heavy plastic sleeves supplied by Angel, RCA, Nonesuch, Moss Music Group, Nautilus, and others unfortunately tend to grind any grit on the surface of the disc into the grooves.)

In the evaluation of sound—as opposed to pressing—quality in phonograph discs, highly personal artistic judgments must be made, and these depend a great deal on the type of music and its performance. For classical-music recordings, which should bear some relationship to a live acoustical event, one should seek a degree of realism in the recorded sound. Acoustical perspective (perceived distance to the instruments) has to be appropriate to the music and to the performance, and it has to be consistently realistic throughout the recording. Instruments must not obtrude out of the sonic fabric like lumps under the carpet. Balances between instruments, if they are not perfectly realistic, should at least be musically apt, and the hall ambiance should match the requirements of the music.
For most popular music, a different set of criteria must be brought to bear, principally because most of the sounds heard have only an incidental relationship to a live acoustical event. For example, listening at the original level to the sound pressures produced at a microphone placed a foot in front of a trumpet (as is typically done) could result in deafness. And an acoustic guitar reproduced at realistic levels would be swamped by that same trumpet. So, instead of looking for "realism" in pop discs, I listened for a certain cleanliness in the sound quality, a freedom from excessive artificial reverberation and other muddying signal processing. I also listened (usually, alas, in vain) for some sign of exploitation of the available dynamic range. In general I was disappointed at the lack of low-level sonic detail in popular recordings. While this criticism can be construed as striking at the very heart of contemporary musical styles, I think it is a justifiable criterion to apply when listening with these audiophile recordings, many of which are marketed under the claim that they provide lower noise levels. If a composer/arranger/performer is given 60 to 90 dB of dynamic range to play with (the latter figure is available with dbx-encoded discs), it should be exploited in the music.

Also listened (as did our Badap spectrum analyzer) with particular interest for low frequencies. I found that there was very little high-level low-bass (below 70 Hz) information on any of the pop or jazz albums I auditioned, with a couple of notable exceptions. Most of the "punch" that many listeners mistake for real bass actually lies in the 70- to 80-Hz region. Classical music often doesn't go very low either, but the frequency content in that case is usually prespecified by the composer.

If you go through the list below and find that one of your favorite recent audiophile recordings is missing, it may be that I just didn't get a chance to listen to it. Keep in mind that not all audiophile discs pass my way, and I have a hard time keeping up with the ones that do. Also keep in mind that while the digitally mastered recordings are marked with our identifying symbol (©), they are still really analog discs because they are played by a stylus tracing an analog groove. Pure-digital home playback from the laser-read Compact Disc System is claimed to be about a year away. In other words, the discs listed below are remarkable, but you ain't heard nothin' yet.

**Orchestral**


**STRAVINSKY**: Le Sacre du Printemps. Cleveland Orchestra, Lorin Maazel cond. **TELARC ©** DG-10054 $17.98.  

**ORFF**: Carmina Burana. Judith Blegen (soprano); William Brown (tenor); Hakan Hagegard (baritone); Atlantic Boy Choir; Atlanta Symphony Chorus and Orchestra, Robert Shaw cond. **VARESE SARABANDE ©** VCDM 1000.80 $15, dbx PS-1046 $18.  


These five recordings present some of the best evidence I've heard in favor of both multi-microphone (London, Denon, Varese Sarabande) and purist (Telarc) recording techniques. The London disc demonstrates multikind techniques at their best, providing stunning clarity for orchestral textures while maintaining a realistic balance between the instruments and the acoustic ambiance. The Utah Symphony's "pops" concert is less well balanced, but it has a very wide dynamic range and a drier, clearer ambiance than that afforded the Boston Pops in their series of digital recordings for Philips. Beethoven's Pastoral Symphony receives its best-sounding recording (at least for all but the storm movement) on a very well-pressed Denon disc. The two Telarc discs have been discussed in these pages before (the Stravinsky in January 1981, the Orff in September 1981).

**Concertos**

**RODRIGO**: Fantasia para un Gentilhombre: Concierto Andaluza for Four Guitars and Orchestra. Alfonso Moreno (guitar); Minerva Garibay, Cecilia Lopez, and Jesus Ruiz

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**The Nomenclature**

- **Direct-to-disc records** (designated in STEREO REVIEW by the symbol ©) are made by feeding the output of the recording console directly to the disc-cutting lathe. This process is intended by bypass the degradations inherent in any magnetic-recording process.
- **Half-speed remastered discs** are cut with both the master tape and the disc lathe running at half their normal speeds (this means that the lathe turns at 16½ rpm). This is said to result in a cleaner, less distorted recording since the cutting stylus has twice as much time to get from place to place.


Here are two ways to make a concerto recording: somewhat distant, with a realistic balance between soloist and orchestra (Telarc, with both orchestra and soloist up close for a more “analytical,” brighter sound (Varése Sarabande). The producers’ choices are in both cases quite appropriate—and successful—for both the music and the performances.

Opera

BERG: Wozzeck. Eberhard Waechter, Anja Silja, Hermann Winkler, others; Vienna State Opera Chorus; Vienna Philharmonic Orchestra, Christoph von Dohnányi cond. London © LDR 72007 two discs $25.96.

WAGNER: Parsifal. José van Dam, Victor von Halem, Kurt Moll, Peter Hofmann, Siegmund Nimsgern, Dunja Vejzovic, others; Chorus of the German Opera, Berlin; Berlin Philharmonic Orchestra, Herbert von Karajan cond. Deutsche Grammophon © 2741 002 five discs $64.90.

Both these recordings are superb examples of natural-sounding multimicrophone techniques used to clarify very complex orchestral and vocal textures. Wozzeck, especially, has never sounded so beautiful on records before.

Solo Piano


These three piano discs are listed in order of increasing sonic distance from the instrument: close, near, and far. As the distance increases, you’ll hear an increase in “room sound” and ambiance, along with a rolloff of the high frequencies and less of a “9-foot-grand” effect. The Audiofon disc is from an analog (!) master, simply microphoned. Only the tape hiss gives the process away.

Guitar


This disc is much more distantly microphoned than are most acoustic-guitar recordings. The main gain is a reduction in player-made noises (as opposed to music) and a pleasing sense of space surrounding the performer.

Organ


The superb Silbermann organ in Freiberg cathedral receives an equally superb recording here, one of the best organ recordings I’ve heard in quite some time. The sound is close, but not irritatingly so, and the bass goes down to around 40 Hz. If only the performances weren’t so stodgy...

Jazz

DAVE GRUSIN: Mountain Dance. Dave Grusin (acoustic and electric piano, synthesizer); other musicians. Rag-Bag: Friends and Strangers. City Nights; Mountain Dance; Thanksong, Captain Caribe, and two others. JVC © VIJ-6326 $16.98.

EARL KLUGH: Finger Paintings. Earl Klugh (guitar); other musicians. Dr. Mucumbia: Long Ago and Far Away; Cabo Frio; and six others. Mobile Fidelity Sound Lab MFQ1 0-125 $50.

SHEFFIELD DRUM RECORD. Improvisations by Jim Keltner and Ron Tutt. Sheffield © 14 $16.95.

DON MENZA: Burnin’. Don Menza and His ‘80s Big Band. Burnin’; Don’t You Know I Care; New Spanish Boots; Tomato Fais; Relaxin’; Dizzyland; M & K REAL TIME © RT-301 $17, dbx PS-1064 $18.

All these are “clean” recordings in the sense outlined in my introduction, with the Grusin and Klugh recordings being the cleanest overall. The Klugh disc is one of Mobile Fidelity’s ultra-thick, ultra-deluxe-packaged, ultra-expensive, Ultra-High-Quality (as they call it) discs. It was pressed by JVC, and it takes the prize for the quietest surfaces of any disc listed in this article. The Menza album is aggressively close-miked in a too-dry recording studio/hi-fi showroom, but it has a wide dynamic range. The Sheffield “Drum Record,” with less than ten...
minutes of playing per side, is destined to become the transient-signal demonstration disc in hi-fi salons. Our spectrum analyzer did not, however, show any substantial bottom information below 60 Hz, and the treble content sloped gently.

Rock

GENESIS: A Trick of the Tail. Genesis (vocals and instrumental). Dance on a Volcano; Entangled; Squawk; Mad Man Moon; Robbery; Assault & Battery; Ripples; A Trick of the Tail; Los Endos. Mobile Fidelity Sound Lab MFSL 1-062, no list price.

FLEETWOOD MAC: Rumors. Fleetwood Mac (vocals and instrumental). Second Hand News; Dreams; Never Going Back Again; Don't Stop; Go Your Own Way; Songbird; The Chain; You Make Loving Fun; and three others. Nautilus NR 8, no list price.

LINDA RONSTADT: Simple Dreams. Linda Ronstadt (vocals); other musicians. It's So Easy; Carnelita; Simple Man; Simple Dreams; Sorrow Lives Here; I Never Will Marry; Blue Bayou; and four others. Nautilus NR 26, no list price.

I found it very difficult to come up with a digitally mastered pop recording of high enough quality to mention in this article. This was not totally unexpected, since the digital art for now is best suited to making jazz recordings, some of which require neither extensive multitrack facilities (unlike pop) nor tape splicing (unlike classical). So I've listed three fine-sounding high-speed remasterings from analog originals. (The Fleetwood Mac disc is described as being "digitally remastered," which probably means only that the mixdown from the analog original was done on a digital recorder.) In contrast to the two other discs listed, the Genesis album has strong bass signals (from synthesizers) down to around 40 Hz, but it is otherwise a bit more compressed and "processed" than the Fleetwood Mac and Linda Ronstadt albums.

As was true in preparing the January 1980 article, quite a few high-tech recordings fell just short of inclusion in the select group above. Perhaps the pressings were a bit too noisy, the sound a bit too distant or overreverberant, the dynamic range too restricted, or perhaps I just didn't care for the performances. In any case, the recordings listed below also deserve a listen.

R. STRAUSS: Ein Heldenleben, Op. 40. Chicago Symphony Orchestra, Fritz Reiner cond. RCA ATL-1-4100 $15.98. An example from what is perhaps the most musically distinguished series of half-speed remasterings. The distinction in this case comes mainly from the electrifying performance; the recording, though excellent for March 1954, has a restricted high-frequency range and higher distortion (from analog tape) than more modern recordings. Stereo-image enthusiasts, however, will be glad to know that this is the only stereo Heldenleben with the correct string seating plan: divided violins, cellos on the left, violas on the right.

BERLIOZ: Requiem, Op. 5. Robert Tear (tenor); London Philharmonic Choir; London Philharmonic Orchestra, André Previn cond. Angel D DSB-907 two discs $21.96. Clear, clean, uncolored sound from ano and cond.; other musicians. I Love a Piano; It's Better with a Band; Remember; Chant la Vie; and six others. MOSS MUSIC GROUP D/MMG 104 $10.98, dbx PS-15 $18. Surprisingly good live pickup, but my copy was noisier than it should have been.


MAHLER: Symphony No. 2, in C Minor ("Resurrection"); Isabel Buchanan (soprano); Mira Zakai (contralto); Chicago Symphony Orchestra and Chorus, Sir Georg Solti cond. London D LDR 72006 two discs $25.96. Sounds unduly compressed at times.


BEETHOVEN: Diabelli Variations, Op. 120. Bernard Roberts (piano). Nimbus 0 DC906 $11.98. Encoded in the UHJ format for quad.

ROSSINI/RESPIGHI: La Boutique Fantasque. Toronto Symphony Orchestra, Andrew Davis cond. CBS MASTERSOUND IM 35842, no list price. The best sound of any digital Mastersound release I've heard. Surface noise, however, is at too high a level for an audiophile pressing.
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Between 1909 and 1912, the period in which the younger Stravinsky composed both The Firebird and Petrouchka and finished all but the orchestration of The Rite of Spring, the super-perfectionist Maurice Ravel put three years into the creation of his own ballet masterpiece Daphnis et Chloé; its concluding “General Dance” alone, he said, cost him a full year’s work. Ravel spoke of his score for Daphnis as “a vast choreographic symphony in three parts,” and indeed it is, among all his works, the most truly symphonic as well as the most stunning.

While the justly popular Second Suite (actually the third of the “three parts”) contains the most sumptuously beautiful music Ravel ever wrote, conductors and audiences in the last two or three decades have come to take the composer at his word and to regard the entire score as a sort of symphony that may be enjoyed in full without the supplemental allure of lavish decor or stage action. As in the similar case of the complete Firebird music, which has somewhat more recently taken its place in the concert repertoire, it would appear that the whole of Daphnis is greater than the sum of even its gorgeous parts. The newest recording, a digital one on the London label, makes this perhaps more gloriously apparent than ever, and in so doing it introduces a formidable new (to most of us) performing entity, the Montreal Symphony Orchestra, and its conductor, Charles Dutoit.

The Montreal Symphony is not a new orchestra, and it has had some notable conductors in the past—Zubin Mehta and Rafael Frühbeck de Burgos among them—but if it has made any recordings before this one, I don’t believe they have circulated in the United States. (The handful of 78s Wilfred Pelletier recorded for Victor forty years ago bore the identification “Montreal Festivals Orchestra,” which may or may not have been the same organization.) The orchestra’s disc debut here, if belated, is a most auspicious one: this Daphnis suggests that Dutoit (heretofore known to most of us mainly through recordings of concerto accompaniments and a too-little-noted Honegger King David) must have been doing all the right things in Montreal since his appointment there in 1977. Having already enjoyed this record a half-dozen times or more, I have no misgivings at all in declaring it the overall finest recording yet offered of this music.

The recorded sound itself surpasses all prior entries in this work’s not undistinguished discography—and it is not just the alleged magic of the digital process, but an ideal balancing of orchestra and chorus and of the various soloists and choirs within the orchestra—and Dutoit’s conception of the work, plus his orchestra’s execution, are in every way up to the very best offered by the most illustrious of their predecessors. In this case, of course, that means the evocative performance by Pierre Monteux and the London Symphony Orchestra and Chorus, circulating now on London STS 15090. It was Monteux who conducted the première of the ballet in 1912; his realization was still fresh and enthralling when he made his early stereo recording of the complete score five years before his death, and the 1959 sound doesn’t really show its age: the Monteux Daphnis is one of the genuine and perhaps indispensible bargains among orchestral recordings.

But, in so sumptuous a score, the superiority of the latest recording technique is quite an advantage, and the Montrealers sound as if they were born and bred for this assignment. In the fifty-six-minute performance there is not a single phrase that is inflexible or in any way unpersuasive. The music goes with a wonderful, spontaneous-sounding sweep, accommodating shifts in rhythm and tempo without showing any seams. The sound is thoroughly Gallic, but in an idealized form, sumptuous and secure beyond what the finest orchestras in France itself have given us. Every magical section shines with con-

"I have no misgivings in declaring it the finest recording yet offered of this music."
Charles Dutoit

(Photo courtesy the Montreal Symphony Orchestra)
Placido Domingo's Voice and Musicality Are Impressive on Three New Releases

Thanks to an all-around musicality that enhances his other pleasure-giving artistic qualities, Placido Domingo occupies a commanding position today not only among tenors but among operatic artists in general. He has managed to make the transition from lyric to dramatic roles with remarkable facility, losing a certain amount of lightness and flexibility but acquiring the vocal stamina to sustain the demands of such roles as those of Otello and Samson uncompromisingly. Add to all this a great deal of personal dignity, and the total package is a winning one indeed, justifying this artist's simultaneous appearance on three new releases.

The most significant of the three is Deutsche Grammophon's "Gala Opera Concert," for it contains newly recorded material (November 1980) and has the added allure of conductor Carlo Maria Giulini leading the Los Angeles Philharmonic. Although the recital starts off with an "Una furtiva lagrima" of slightly suspect intonation, Domingo pours out a generous flow of gleaming tone, with securely placed B-flats all over the place, a solid B-natural in Ernani, a "Di quella pira" confidently delivered in the original key, the whole enriched by sensitive dynamic gradations. Surely his "O Paradis" here cannot be matched by any other tenor today (though he holds on to the climactic note longer than necessary), and while he does not give us the well-nigh impossible morendo ending Verdi specified in "Celeste Aida," he concludes the aria with a sensitively modulated mezzoforte. I particularly recommend the handling of the conclusion of "Je crois entendre encore" to connoisseurs of vocalism: it is technically almost incredible.

A recital disc from CBS offers not new recordings but excerpts from various previously recorded complete operas, including selections from Le Cid and Adriana Lecouvreur, that are not easily encountered out of context. There is an "Una furtiva lagrima" here too, less caressingly sung than on the Deutsche Grammophon disc but marked by a firmer intonation. The tenor is again in stellar form, communicating the kind of virile ardor in which he is unmatched today. Though I can recommend the disc wholeheartedly to Domingo fans, I must add a few cautions. The familiar Butterfly duet (in which Renata Scotto matches Domingo's excellence) fails to catch fire for want of ignition (by conductor Lorin Maazel). John Pritchard (in the Elisir excerpts) is also not incendiary, but James Levine's passionate conducting makes a strong case for the much maligned music of Adriana Lecouvreur. The CBS engineers perform their tasks efficiently, but several excerpts end with artificial-sounding fadeouts because they have been lifted directly out of their operatic contexts.

"Perhaps Love," also from CBS, is one of those "crossover" products record companies dream up from time to time in the hope of creating real profits from unreal combinations. It speaks well for Domingo's taste that he chose popular songs of a certain quality for the program, and though critics with stronger pop credentials than mine may disagree, it is possible that his elegant tone and earnest artistry are among the better things that have happened to this inoffensive repertoire. The title tune combines the tenor voices of Domingo and John Denver in a way that will neither ennoble nor embarrass their owners, and Denver's "Annie's Song" is, I suppose, pop music's eight-bar-going-nowhere answer to the Pachelbel Canon. The session was engineered pop-style, with a rhythm section that at times comes close to obliterating Domingo's voice, but it could have turned out worse in less artistic hands. What remains to be said? Viva Domingo!

—George Jellinek

Stereo Review
Warning: The Surgeon General has determined that cigarette smoking is dangerous to your health.

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There's vodka, and then there's Smirnoff.
mistakably that this is to be something special, and throughout the sixteen ensuing pieces—among which are most of the familiar favorites and some really lovely surprises—this impression is more than sustained. It is not that this excellently recorded recital takes us back to the days of Kreisler himself and accompanist Carl Lamson: Mintz and Benson, as serious artists, know that mere imitation would be a shallow and insubstantial sort of homage, and in his touching little note on the jacket Mintz advises that his solution has been "to combine elements of Kreisler's approach with my own way of playing" as the way to express "my sincere affection for Kreisler as composer and artist." It is an eminently successful approach, in the unaccompanied Recitativo and Scherzo-Caprice written for Eugène Ysaÿe, in the tastefully proportioned Caprice Viennais in which Gemütlichkeit never even borders on schmalz, in the several Spanish- and Gypsy-flavored pieces, and what may well be the most compelling performance of Liebesleid yet recorded—not excluding Kreisler's own.

In the rosy glow left by these two enchanting sides, the omission of such well-loved pieces as Schön Rosmarin and The Old Refrain may be regarded not as a disappointment, but rather as an implicit promise of a Volume II to come; whether that promise is eventually kept or not, the present disc is a treasure. —Richard Freed

Amanda McBroom
Direct to Disc:
Popular Singing with Intelligence and Humor

The $16.95 price tag may put a new direct-to-disc item from Sheffield Lab out of the reach of many, but anybody who does ante up the loot can at least be certain of taking home an excellent program well performed, beautifully recorded, and handsomely packaged. Amanda McBroom has those essential virtues so rare in popular singers: a shining intelligence to illuminate the words and music of every song she sings, a sense of humor, and the talent to translate her understanding of a song into emotional, musical terms. The program is a mixed bag, but there are no lemons in it. The album
title, "West of Oz," is derived from a Hugh Prestwood song called Dorothy. It's about what's going to happen to poor Dorothy once she returns from Oz to the black-and-white, day-to-day world of Kansas. My Father Always Promised, from the pen of Judy Collins, is just Amanda’s meat, a wryly anecdotal, folkish story-ballad about a woman who fulfills the dream of her father, a miner in the West, to live in France—when it is too late for him to share her joys. The light-touch Gossamer gives this versatile singer a chance to show what she can do with just a hint of humor, and Happy Ending is an outright comic routine about a “junior wrangler” and what transpires when he meets up with a “car-hop burger queen” one critical night on Sunset Strip. Her own song Reynosa has to do with hilarious inopportunity: “Beer and Doritos and slapping mosquitoes/ Was not my idea of romance.” (And while we’re on “romance,” McBroom will be remembered as the writer of the memorable title song for Bette Midler’s recent movie The Rose.)

In addition to all the good singing of good songs, there are a couple of pleasant, purely instrumental interludes composed and conducted by the gifted Lincoln Mayorga. He also happens to have been one of the founders of Sheffield Lab, but I don’t think you’re going to be able to hold that against him.

—Paul Kresh

AMANDA McBROOM: West of Oz. Amanda McBroom (vocals); instrumental ensemble, Lincoln Mayorga cond. Happy Ending; Only with You; Kitchicker; Reynosa; My Father Always Promised; Over the Rainbow; Dorothy; Dock of the Bay; Not Gonna Say I’m Sorry; The Walk to Chatham Corners; Gossamer. SHEFFIELD LAB 0 15 $16.95.

CHICO FREEMAN: fusing the traditional with the unorthodox

“The Outside Within”:
A New Album from The Most Important Horn Since Coltrane

MERE words cannot adequately describe how I feel about Chico Freeman’s new album “The Outside Within,” and in any case I have already exhausted, in previous reviews of his work, the allotted number of superlatives beyond which a critic’s enthusiasm might justifiably become suspect. Simply stated, the man has all the qualities of a “jazz giant,” an accolade I would like to see applied less frequently than it has been in the past. I do not bestow that description on Mr. Freeman idly; the flow of his creative juices seems to accelerate with every new release, and it is about to reach flood level with this new one. I am now, more than ever before, convinced that Chico Freeman is the most important horn player to appear on the jazz scene since John Coltrane. Of course, there is a good deal of Coltrane in Freeman’s music, but unlike so many other saxophonists, he does not permit the late titan’s music to inhibit him; instead, he uses its distinctive facets as mirrors to reflect his own ideas.

The new album features a superb quartet, pianist John Hicks, bassist Cecil McBee, and drummer Jack DeJohnette forming a perfectly splendid background for the leader’s tenor saxophone and bass clarinet (at times played simultaneously through double tracking). This is not music to be easily pigeonholed in this or that category, for one of Freeman’s fortes is his eclecticism; he has the wonderful ability to fuse tradition with the unorthodox, but in such a subtle manner that the listener may not be aware of either ingredient. What do I especially recommend on “The Outside Within”? Every note, both singly and together.

—Chris Albertson

CHICO FREEMAN: The Outside Within. Chico Freeman (bass clarinet, tenor saxophone); John Hicks (piano); Cecil McBee (bass); Jack DeJohnette (drums). Undercurrent; Luna; The Search; Ascent. INDIA NAVIGATION IN 1042 $8.98 (from JCOA/New Music Distribution Service, 500 Broadway, New York, N.Y. 10012).
Tom Verlaine's "Dreamtime" May Be Last Year's Best Rock Album

Yes, the fundamental objections still apply. Yes, his singing is impossibly adenoidal and mannered. Yes, despite the obvious intelligence displayed in them, the surrealistic, hallucinatory lyrics are as vague and mushheaded as those of any fading flower child you can name (although I did just manage to catch his drift on A Future in Noise).

But upon sober reflection I have decided that none of that really bothers me a whit, and it shouldn't bother you, either, for his new "Dreamtime" for Warner Bros. is Tom Verlaine's most consistent, fully realized recorded effort thus far.

Every one of the songs is a structural delight executed in a variety of styles ranging from his trademark modal excursions to soaring Byrds-like pop, to heavy metal with brains, to psychedelic Booker T. & the M.G.'s—even something that recalls Dire Straits and Derek and the Dominos. Unifying all this is Verlaine's impressive guitar work, by turns piercingly lyrical, gut-wrenchingly intense, and calmly reflective. I don't think there's an electric guitarist in the world at the moment who so consistently achieves such a human, vocal quality in his solos. You've heard it before, but Verlaine is the kind of guitarist who gives the impression that he is playing on his nervous system.

The back-ups, by some New Wave luminaries and including one of Verlaine's old Television bandmates, is solid and no-nonsense, and the whole thing has been recorded with a satisfying surface sheen and sonic depth. Even if you haven't fallen for Tom Verlaine in the past, you should hear this record; if there was a better piece of rock-and-roll foisted on the public in 1981, it didn't cross my desk.

—Steve Simels

TOM VERLAINE: Dreamtime. Tom Verlaine (guitar, bass, vocals); Fred Smith (bass); Jay Dee Daugherty (drums); other musicians. There's a Reason; Penetration; Always; The Blue Robe; Without a Word; Mr. Blur; Fragile; A Future in Noise; Down on the Farm; Mary Marie. WARNER BROS. BSK 3539 $8.98, © M5 3539 $8.98.
Pianists may not have quite the glamour of singers and conductors, but they seem to have more competitions and awards. The first-prize winner of the 1981 Leeds International Pianoforte Competition in England was Ian Hobson (twenty-nine), a British-born Yale graduate who teaches at the University of Illinois. His winnings include a gold medal, $4,000, a Steinway piano, and concert and recording engagements valued at $120,000. He will record for EMI/Angel, and his first album, a Schubert sonata, is scheduled for January release.

Randall Hodgkinson (twenty-six) of Cleveland, Ohio, a graduate of the New England Conservatory, won first prize in the 1981 International American Music Competition for Pianists sponsored by Carnegie Hall and the Rockefeller Foundation. He received $10,000, a recording contract, and other benefits which may bring the total booty to $75,000. He will record American music for New World Records, but detailed repertoire plans have not yet been announced.

No one of the sixty-six contestants in this season’s Liszt-Bartók Piano Competition in Budapest was considered worthy of first prize. A second prize of $1,500 was awarded to Muza Rubatsklyye (twenty-six), of the Soviet Union, who has studied at the conservatories of Vilna and Moscow. The third prize of $1,000 went to Hortense Carter-Bresson (twenty-three), of France, who has studied at the Paris Conservatory and the University of Indiana. She is the niece of the world-famed photographer Henri Cartier-Bresson.

The government of Finland has knighted Danish pianist Victor Borge (seventy-two), conferring on him the Order of the White Rose. Finland thus recognized Borge’s work in providing scholarships for Scandinavian students to American universities. Eighteen years ago, Borge, who is Jewish, founded Thanks to Scandinavia, a scholarship fund, as a gesture of gratitude to Scandinavians who helped Jews fleeing Nazi persecution in World War II. He has raised more than $1 million for the fund and hopes to reach $2 million by its twentieth anniversary in 1983. Having been given similar honors by Denmark, Norway, and Sweden, Borge commented, “Now I have enough knights for two weekends.”

One of the fears an artist has to conquer in order to become a superstar is the fear of overexposure. Violinist Itzhak Perlman seems to have put that one far behind him. He stays busy in EMI/Angel’s studio recording jazz as well as Bach, Beethoven, Brahms, and Bartók, he makes frequent TV appearances, and the White Rose. Finland thus
Disc and Tape Reviews

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

RECORDING OF SPECIAL MERIT

ALFONSO EL SABIO: Cantigas de Santa Maria. Esther Lamandier (voice, harp, portative organ, vielle). ASTREE AS 59 139.8.

Performance: Fabulous

Recording: Fine

The four hundred or more Cantigas de Santa Maria collected (some probably written) by Alfonso I in the thirteenth century are considered to be a monument of medieval song. Written in Galician-Portuguese, the poems recount the Virgin's miracles or sing her praises. Esther Lamandier chose nine to display the collection's aspects of grandeur, humour, and tenderness. Although scholars might wish for more information in the jacket notes about Lamandier's transcriptions and added accompaniments, preludes, and interludes for harp, portative organ, or vielle, no one will question the effectiveness and beauty of her performances. Her light, well-focused voice is perfect for the sinuous lines of these haunting melodies. The Moorish influence is obvious in the supple coloratura, and the Spanish dance rhythms sparkle in her spirited playing. The accompaniments are bold but tasteful, making the most of drone basses. Lamandier is a fine instrumentalist as well as a singer, and her prelude on the vielle for "Entre Avi e Eva" is as stunning in its imaginative setting of the melody as in its performance. Anyone who heard Lamandier's exquisite previous album, "Decamerone" (AS 56), will surely want this one. And if you missed "Decamerone," don't let the Cantigas go by.

S.L.

RECORDINGS OF SPECIAL MERIT

J. S. BACH: Hunting Cantata (BWV 208). Edith Mathis, Arleen Auger (sopranos); Peter Schreier (tenor); Theo Adam (bass); Berliner Solisten; Kammerorchester Berlin. Peter Schreier cond. ARCHIV 2533 364 $10.98, @ 3310 364 $10.98.

Performance: Fine

Recording: Excellent

J. S. BACH: Coffee Cantata (BWV 211); Peasant Cantata (BWV 212). Edith Mathis...
Coffee Cantata, with just the right amount of murder, but since she has the hit tune of the entire work, "Sheep may safely graze," she steals the show. The purity of her voice and the simplicity of her style lift the music to its height.

Of all the recordings of the Bach cantatas being released now, Peter Schreier's are among the best, and his judicious adaptation of early-performance mannerisms for modern times makes his records especially rewarding. S.L.

RECORDING OF SPECIAL MERIT


Performance: Scrupulous
Recording: Very good

Anyone who has heard Charles Rosen's performances of the Beethoven Fourth and Fifth Piano Concertos and Diabelli Variations on Peters International knows that Rosen is a singularly illuminating pianist whether one agrees with his interpretations or not. He holds true to form in this album, offering readings free of willful romantic mannerism yet with ample warmth and adhering to the musical text as faithfully as present-day knowledge will permit.

If some movements here seem a bit studied, there is still much that brings vast pleasure. Right off, for instance, in Op. 31, No. 1, there is the elegant rendering of the Adagio in the aria-like slow movement. Rosen's careful observance of Beethoven's allegretto tempo markings in the finale of that sonata is notable, and the easy pacing of the main body of the work allows him to make the most of the humor in the last pages. His handling of the pedal for purposes of color rather than mere tonal sustenance is revelatory in the first-movement recapitulation of Op. 31, No. 2.

Most striking in Rosen's reading of the Waldstein Sonata is the pedal work in the finale and the very literal allegretto moderato pacing, which again heightens the impact of the wonderful prestissimo coda. The familiar Appassionata gets a thorough freshening up here. Again there is very impressive use of the pedal, especially to bridge the first and second movements. The charming little Op. 78 has always been a special favorite of mine. The opening movement could stand more sentiment, but Rosen does marvells with the witty Allegro vivace that follows. The Lebewohl (or Les Adieux) sonata gets an unusually even-tempered reading, but again one can take enormous pleasure in the atmosphere Rosen communicates in the first-movement coda. The appeal of this set is heightened by the use of a first-rate, beautifully voiced piano, expertly recorded.

D.H.

(Continued on page 90)
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Haydn's "L'Infedelta Delusa": A Paradoxical Masterpiece

Franz Joseph Haydn wrote his L'Infedelta Delusa in 1773 for the visit of some royal personage or other to his employer's seat at Esterhaza in the Hungarian plain. The opera was repeated for a visit by the Empress a few weeks later, perhaps once more the following year, and that was it. Though the release of a new Philips recording of a performance of the whole work must be considered a significant event musically, L'Infedelta was no more than one among many opera productions that routinely occupied a great deal of Haydn's time in Prince Nicolaus' boondocks. Write 'em, arrange 'em, rehearse 'em, perform 'em, and on to the next.

Where Haydn got the librettos for all these works is something of a mystery. Marco Coltellini was quite a respectable librettist of the day, but his bromidic script for L'Infedelta had very likely been knocking around for some time before Haydn set it. The story is one of those rustic comedies in which the happy peasants entertain us while the happy peasants entertain us while the happy peasants entertain us while Haydn's music for all this is delightful, even glorious. Almost too much so. The father, for example, sings an aria explaining to his daughter how to say no. It is a charming little number endowed with suitably charming musical ideas by Haydn. Fair enough—except that nothing in the scene, the characters, or the text quite prepares us for the extraordinary musical development that then follows. Similarly, the sister, disguised as an old woman, sings a burlesque song (wonderfully done by Edith Mathis) about the travails of old age that appropriately achieves almost tragic dimensions.

The weight of these arias is all out of proportion to the fragile little comedy. Only in the ensembles—two finales, an introductory introduction, and a short duettino—does Haydn provide music that responds directly to the dramatic movement. Most of the time he is busy writing brilliant, highly developed, even moving set pieces, with the result that the music seems to overpower the simple text with grand statements fit for a much more powerful drama. The father's aria cursing out the hapless landowner might be Rocco telling Fidelio about Pizza-ro's cruelty, and the landowner's revenge aria has an edge and a range to it that are almost scary, but there is hardly anything in the action or in the characters themselves that would demand musical development of such scope, thrilling, but confusing. Perhaps someday someone will figure out some way of making all this work in the theater (I would try a commedia dell'arte approach with masks and a suggestively ominous undertone).

In the meantime, Philips has given us a performance that is a wonderfully fresh adaption to the continuing Haydn opera series by Antal Dorati. The conducting is excellent, and the cast, headed by Edith Mathis and Claes H. Ahnsjö, is good to superb. The approach is, as it should be, robust and spirited, and both Mathis and Ahnsjö have the style and dramatic oomph to give these characters some human depth. Barbara Hendricks is dramatically effective, but she is in really good voice only toward the end. Both the other men, Michael Devlin and Aldo Baldin, are capable.

L'Infedelta Delusa is only a five-sided opera, and so we get for side six a bonus sampler of Haydn's operatic music. His operatic activity, still hardly surveyed, included mounting over one hundred different operas—in all, more than 1,000 performances in ten years. Most of the great masters of the day were represented at Esterhaza, but, in true eighteenth-century style, Haydn did not hesitate to rework, rearrange, reorchestrate, or even recompose many of them. A big scene for Orestes ("Ah, tu non senti, amico, Qual destra omicida") was inserted at the beginning of Tommaso Traetta's Ifigenia en Tauride, for example; whatever the original was like, Haydn's added scene is undeniably powerful, and it is impressively sung here by Ahnsjö. The other material—for Haydn's own Acts and Galatea, for an opera by Giuseppe Sarti, and a curious and rather incomprehensible try at an operatic pastiche—is a bit less sensational, but certainly we are privileged to hear it at all (though it is curious how weak Aldo Baldin is here after his strong performance in L'Infedelta).

The Lausanne Orchestra is perhaps not the top virtuoso ensemble of Europe, but Dorati's capable hands it sounds good. The recording is excellent: mellow and clear, with just the right balances between the orchestra and vocals to give presence and focus. Despite some shortcomings of unevenness, a delightful and treasurable recording of an opera that is in all its parts (if not its whole) a paradoxical masterpiece.

—Eric Salzman

Haydn: L'Infedelta Delusa; Oreste's Recitative and Aria (Illegienza in Tauride); Neptun's Aria (Acide e Galante); The Knight's Aria (La Circe Ossia l'Isola Incantata). Edith Mathis (soprano), Alan Opel (tenor), Barbara Hendricks (soprano), Sandrina; Claes H. Ahnsjö (tenor), Nenci; Aldo Baldin (tenor), Fiippo; Michael Devlin (bass), Nanni; Orchestre de Chambre de Lausanne, Antal Dorati cond. PHILIPS 6769 061 three discs $26.94.
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Manufacturing Plant: Bissendorf/Hannover, West Germany
which it is dismissed in some quarters. I sus-
pect that if Flotow had been a French or
Italian composer, he would have been
treated more kindly by the critics. After all,
no German contemporary of Mendelssohn,
Schumann, or, heaven forbid, Wagner was
expected to write such fluff. And yet Mar-
tha endures, and this new recording is proof
of its lasting popularity in German-speak-
ing lands.

The nice, idiomatic performance pleads
the opera’s case effectively, but it will prob-
ably fall short of making new converts for
it. The singing principals go about their
tasks with considerable skill and, in the
cases of Lucia Popp and Doris Soffel, ample
charm. Siegfried Jerusalem is an appealing
and dependable Lyonel; as his foster broth-
er Plumkett, Karl Ridderbusch delivers his
rousing Porter Song with hearty gusto but
shows signs of tonal fraying here and there.
The outstanding Munich orchestra is led by
Heinz Wallberg with unsentimental effi-
ciency. While there is nothing objectionable
here, I still prefer the only stereo competi-
tor (Angel S-3753, another Munich produc-
tion); even sonically I find the earlier set
(1970) superior, for the sound is more for-
ward and has more warmth and body. Mul-
tilingual annotations are supplied with the
Eurodisc set, but the libretto is in German
only.

G.J.

HARTY: An Irish Symphony; Comedy
Overture. Ulster Orchestra, Bryden Thom-
son cond. CHANDOS 6 ABRD 1027 $17.98
(from Brilly Imports, 155 North San Vi-
cente Boulevard, Beverly Hills, Calif.
90211).

Performance: Spirited and polished
Recording: Quite good

Sir Hamilton Harty (1879-1941), who un-
fortunately did not live into the age of mi-
crogroove, let alone stereo, is remembered
as a brilliant conductor—surely the greatest
to come from Ireland—and for his extreme-
ly popular arrangements of suites from
Handel’s Water Music, Royal Fireworks
Music, and some other pieces, as well as
a lesser-known but quite ingratiating John
Field Suite. Harty also composed some at-
tractive original music; My Lagan Love and
some of his other songs used to be in active
circulation, but this new Chandos disc may
be the first recording of his orchestral works
to reach our shores.

Harty apparently initiated his creative
activity with the Irish Symphony, which
won a prize in the 1904 annual competition
of the Feis Ceoil, the Irish National Music
Festival. The four movements are based on
folk tunes, and each bears a descriptive title
associated with parts of the land or historic
events. The second movement, a scherzo
headed The Fair Day, has been performed
and recorded on its own with some frequen-
cy; among its three themes is The Girl I
Left Behind Me, which the Irish-born Vic-
tor Herbert incorporated into his own
American Fantasy in 1893. Recorded here
in Harty’s 1924 revision, the symphony is
by no means a mere potpourri, but a well-
proportioned work in which the most skill-
ful and imaginative use is made of the folk
materials—not an exciting discovery, per-
haps, but a happy and engaging one. The
Comedy Overture, composed in 1906, is a
bit less engaging in its basic materials but is

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JANUARY 1982
The significance of Philips' new recording of Alban Berg's Wozzeck lies not in its mere arrival—this is, amazingly enough, the fourth complete recording of the work—but in its being a Viennese Wozzeck. Works of the modern Viennese school—Schoenberg, Berg, and Webern—were played and revered all over the world before they were really accepted in Vienna, a very conservative musical town (for that matter, Mozart, Schubert, and even Beethoven had some of the same problems). This recording suggests that Berg at least has finally been accepted in his home town!

Wozzeck is generally thought of as a landmark of German (or, if you prefer, Austrian) expressionism—a moving twenty-first-century landscape of alienated and suffering people trapped in a world they never made. But, modernistic as it still seems, Wozzeck has strong roots in the past. It is based on a play that was written a century earlier; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classical and Romantic music; it incorporates folk songs and waltzes even as its ongoing style is a kind of music; its scenes are carefully molded into the forms of Classic...
No one gets more beautiful sounds out of a clarinet than Richard Stoltzman, and the voluptuousness of those he produces on this disc should be enough to turn many of his colleagues a deep shade of green. Indeed, he appears to be less than fully immune to his own siren song: now and then the momentum tends to slacken because of his indulgence in a shower of ripe, ravishing tones. But for the most part the performance of the Clarinet Concerto is paced as beautifully as it is played, and if it does not quite match the artistry of James Galway produced an other flute concerto by adapting the Clarinet Concerto out of one he had composed for oboe. (Though Mozart himself may be said to have instrument a little weightier and less aggressive, the technique and the timbre of the work that remains among the greatest of all flute concertos when he made a flute concerto out of one he had composed for oboe.) While it may be true, as stated in the notes here, that “only an occasional transposition was required originally for basset horn”) While it may be true, as stated in the notes here, that “only an occasional transposition was required since Mozart's solo part for bassoon suits other listeners. There is no denying the orchestral contribution under Alexander Schneider and the recorded sound is transparency itself.

R.F.

MOZART: Die Zauberflöte. Ileana Cotrubas (soprano), Pamina; Eric Tappy (tenor), Tamino; Christian Boesch (baritone), Papageno; Martin Talvola (bass), Sarastro; Zdzislaw Donat (soprano), Queen of the Night; Horst Hiesermann (tenor), Monostatos; José Van Dam (bass), Speaker, Elizabeth Kales (soprano), Papagena; others. Vienna State Opera Chorus; Vienna Philharmonic Orchestra. James Levine cond. RCA ® CTC4-4124 four discs $47.98, ® ATK3-4124 $47.98.

Performance: Energetic
Recording: Full-blown

A single hearing of the overture's principal subject tells us that James Levine's approach to The Magic Flute is far from the spacious cosmic readings offered by many conductors of earlier generations. He keeps things moving right along, clearly realizing.
and correctly, that sublimity, at least in Mozart, should not be equated with dragging tempos. A special feature of this performance, then, is the pacing, and an especially rewarding example is the way Levine holds together the long accompanied recitative that opens the first-act finale. Splendid also is the orchestral coloring and the careful dynamics and accentuation.

Eric Tappy’s heroic portrayal of Tamino brings us some exquisite Mozart singing. His well-focused sound is consistently noble, and his passionate addresses to Pamina are characterized by a princely restraint. Unfortunately, Ileana Cotrubas’ Pamina does not respond in kind. Perhaps Pamina’s parentage, a bit on the shrewish side, knocked some royal bearing out of her as a child, but interpreting the role as a souabrette (more appropriate for Susanna or Zerlina) does not further the opera’s theme of exalting noble character. Nor does Cotrubas’ vibrato in sustained passages, slides to high notes, and too-frequent use of half-voice help the music.

On the plus side there is Christian Boesch’s rough and ready Papageno. His lusty voice alone is sufficient to convey Papageno’s honest preference for wine, food, and women rather than lofty spirituality. The essence of idealism is embodied in Martti Talvela’s Sarastro. Talvela’s rich, velvety voice is a superb instrument for Sarastro’s message of peace and brotherhood, and his measured pacing of the long phrases dispels any thought of carnal desire.

Zdislawa Donat’s singing of the fierce aria assigned to the malevolent Queen of the Night is simply fabulous. In the first aria she ticks off the high F effortlessly; in the second she proves there are plenty more where that came from, framing the high notes in a striking staccato. Her instrumental-like clarity reminded me of the fabulous Maria Korsaj in the role.

Besides the music, all the spoken dialogue is faithfully recited. The histrionics are high, and the sound-effects engineer spares neither thunder, wind, nor the roaring of lions; one could, in fact, wish for a little less. In all, this is a good Flute, but...S.L.

Performance Sparkling
Recording Excellent

Even for the insulated music-lover, life brings its little disillusionments. For me, it came as a shock to find out that of all those lovely Offenbach overtures I had been enjoying through the years only a couple were actually written by Offenbach himself. For his early light works, it seems, he would supply only brief, spirited introductions before the curtain rose. This was not enough for audiences in Germany, where they demanded a full-scale orchestral piece to start the evening off. And so Carl Binder, a colleague of Franz von Suppé, supplied the overture to Orpheus in the Underworld, while others, even less well-known, created the familiar, delicious confections that precede Bluebeard and The Grand Duchess of Gerolstein, expanding on the composer's own preludes and padding them out with excerpts from the operettas. In fact, the only work on this program entirely composed by Offenbach is the overture to Vert-Vert, which is named, by the way, for a pet parrot. Even the Barcarolle from The Tales of Hoffman in its familiar instrumental form was arranged by Manuel Rosenthal. No matter. From start to finish here, the champagne froths and one exhilarating orchestral episode succeeds another. There have been other recordings covering this ground, but none, I dare say, so brilliant as this new entry from Herbert von Karajan and Deutsche Grammophon.

RECORDING OF SPECIAL MERIT

Performance Fluent
Recording Very good

Boris Krajny, a thirty-six-year-old Czech identified in the notes to this album as a pupil of both Frantisek Maxian and Ivan Moravec, is a formidably equipped pianist with a fine feeling for the Gallic idiom that links these works. And what an intriguing, attractive program it is, drawn entirely from the five-year period 1924-1929. The biting clever Honegger concertino, one of several works first recorded by Eugene Ormandy in his Minneapolis days nearly fifty years ago and subsequently recorded by the improbable team of Oscar Levant and Fritz Reiner, has been underrepresented on records for years, and so has the Roussel concerto; the two fill a single side snugly, and conductor Stanislav Macura seems as happily attuned to them as Krajny does. The Poulenc Aubade is performed without a conductor (Pavel Prantl is credited with preparing the orchestra for recording) and receives a somewhat earther, more full-bodied presentation than we may be accustomed to; it is by no means an unsubtle one.

(Continued on page 97)
FOUR recent recordings of four different Bruckner symphonies offer a mixed bag for fans of the Austrian master: two real winners and a couple of fine-sounding but musically disappointing also-rans.

With Herbert von Karajan's supercharged new digital recording of the Third Symphony on Deutsche Grammophon, we start right off with the vexing problem of the text. In company with everyone else who has recorded the Third save Bernard Haitink, Karajan has opted for Bruckner's third revision (1889) with its chopped-up finale. Although I wish he had chosen the Fritz Oeser edition, which restores important material from the second revision (1878) and thus gives a more equitable balance to the finale, under Karajan's baton the music is really heady stuff. The "Beeethoven Ninth" inspiration of the first movement becomes very clear, and a rapt intensity dominates in the slow movement. The scherzo is treated with a fine amalgam of vigor and grace (I suspect a tape-editing lapse is responsible for the unusually long pause between the end of the trio section and the return of the main section). In the finale, Karajan achieves maximum contrast between the episodes of high drama and those evocative of polkas and Ländler.

Karajan's interpretation is supported by magnificent playing on the part of the Berlin Philharmonic. The recording job is superb, one of DG's most successful digital transferings yet released. The sound is rich in detail, with a somewhat closer than usual mixing resulting in a gain in total body for the orchestra. Not the least remarkable aspect of this release is that the three final movements, more than thirty-four minutes in length, fit onto a single disc side, eliminating the turnover midway in the slow movement that mars other recordings of the Third. (Those who want the only recorded performance of the 1878 version of the work will find Haitink's 1965 Concertgebouw disc on Philips still eminently serviceable, if lacking the fire and brimstone of Karajan's reading.)

CONDUCTING the Dresden Staatskapelle Orchestra on Angel, veteran Brucknerian Eugen Jochum has come up with what for me is the most convincing recorded performance yet of the atypical but altogether fascinating Symphony No. 6. He has used the original version of the score, and, in contrast, respectively, to the two fine Chicago Symphony recordings conducted by Daniel Barenboim (DG) and Sir Georg Solti (London), he emphasizes Bruckner's lyrical-dramatic nor its sinewy-architectural qualities. Rather, he works for a wholly natural musical flow (though disciplined every step of the way). The final pages of the slow movement and the marvelously bucolic mid-section of the scherzo, with its lovely episode for horns, are among the highlights of Jochum's reading, but he brings it all to a glorious head with an absolutely sizzling finale. Indeed, the guise in which Jochum presents the Sixth Symphony tempts me to call the work Bruckner's Sinfonia Capricciosa. Both the quality of the orchestral playing and the (analog) recording are beyond criticism.

EVER since hearing Sweden's Herbert Blomstedt conduct Berwald in Copenhagen in 1957, I have been anticipating his achieving major status, so it is disappointing to report that his new Denon recording of the most popular Bruckner symphony, No. 7, is interpretively not in the big leagues. That's a great shame, since Blomstedt has everything else going for him here: a great orchestra (again the Dresden Staatskapelle), Denon's superb digital mastering, and a fine recording locale (Dresden's Lukaskirche). The opening of the symphony is promising enough—very even phrasing and a beautifully steady unfolding—but from there on the reading is uniformly bland, especially in comparison to those by Karajan and Furtwängler. There is little or no communication of the rapt ecstasy implicit in so much of this music, particularly in the transition to the recapitulation of the first movement. The great brass lamentation over the death of Wagner that Bruckner wrote into the last pages of the slow movement very nearly comes a cropper here because of a painfully overbalanced horn entrance (Blomstedt omits, by the way, the controversial cymbals and triangle at the climax of the movement). By and large, the best playing is in the trio section of the scherzo, but not even this together with the very fine, open-sounding recording is enough to put the release—especially at $30—in the same league as Karajan's 1978 DG album of the Seventh. (My review copy, incidentally, lacked the English/German/French program notes promised on the cover—and I don't yet read Japanese!)

That colossalus among Bruckner symphonies, No. 8, represents pretty much the ultimate challenge to the would-be Brucknerian. For his new DG recording of it, Daniel Barenboim had, like the other conductors considered here, one of the greatest orchestras in the world, the Chicago Symphony, and he certainly made more of the opportunity than Blomstedt did. Barenboim's reading is intensely dramatic and totally committed—even replete with audible conductor groans at strategic points that would do credit (?) to Glenn Gould. But Karajan and Furtwängler are the most formidable competitors in this work, and comparative listening reveals all too clearly Barenboim's failure to discipline his performance adequately so as to sustain the all-important big line, which is the sine qua non for a Bruckner conductor. Barenboim does (his one lapse); I have heard only Furtwängler and Bruno Walter bring off the boat in the scherzo in the same way Karajan does (his one lapse); I have heard only Furtwängler and Bruno Walter bring off this windswept, bell-haunted masterpiece to perfection.

Barenboim's accompanying reading of the wonderful Bruckner Te Deum suffers from many of the same faults that afflict his Eighth Symphony performance, especially a tendency to rush the climaxes; he also takes rather too fast a pace at the opening. A comparison with Karajan's magnificent DG recording of the Te Deum is, again, singularly instructive. Barenboim, however, has a superb solo vocal quartet and first-rate choral forces. The digital recording is splendidly full-bodied and richly detailed (harp fanciers take special note!).

—David Hall

BRUCKNER: Symphony No. 3, in D Minor. Berlin Philharmonic Orchestra, Herbert von Karajan cond. DEUTSCHE GRAMMOPHON 0 2532 007 $12.98, © 3302 007 $12.98.


BRUCKNER: Symphony No. 8, in C Minor. Chicago Symphony Orchestra, Daniel Barenboim cond. Te Deum. JESSEY NORMAN (soprano), YVONNE MINTON (contralto); DAVID RENDALL (tenor); SAMUEL RAMSEY (bass); Chicago Symphony Chorus and Orchestra, Daniel Barenboim cond. DEUTSCHE GRAMMOPHON 0 2741 007 two discs $25.96, © 3882 007 $25.96.
though, or in any way less than fully convincing. If the assortment looks inviting, both the performances and the rich, well-balanced sound can be virtually guaranteed to please.  R.F.

RAVEL: Daphnis et Chloé (see Best of the Month, page 76)

RECORDING OF SPECIAL MERIT

RODRIGO: En los Tríguales; Sonata a la Española; Tiento Antiguo; Junto al Generalife; Fandango; Trois Petite Pièces; Bajando de la Meseta; Romance de Durandarte. Pepe Romero (guitar). PHILIPS 9500 915 $10.98, © 7300 915 $10.98.

Performance: Spanish treasure
Recording: Excellent

It's just as you might have suspected all along--there's more to Joaquin Rodrigo than just those big guitar concertos. He also writes for solo guitar and proves just as dashing and inventive a composer in short works as in long ones. On this record Pepe Romero, one of the most nimble-fingered Spanish guitarists in the world, performs a whole program of Rodrigo's shorter works with immense elegance and style. As rhythms shift and sonorities swell from the merest murmur to the dazzling finale of the Sonata a la Española, the breadth and fire of the music seize attention and quicken the spirit. Three cheers and an olé!  P.K.

ROUSSEL: Piano Concerto, Op. 36 (see POUJENC)

RECORDING OF SPECIAL MERIT

D. SCARLATTI: Sonatas Nos. 6, 8, 9, 10, 11, 13, and 28. SOLER: Sonatas in D Minor, C-sharp Minor, D Major, G Minor, F-sharp Minor, and F Major. Alicia de Larrocha (piano). LONDON CS 7177 $10.98.

Performance: Extremely sympathetic
Recording: Agreeably realistic

To get the obvious question out of the way: ought these sonatas to be played on a piano? Our pre-eminent authority on Soler is Frederick Marvin, who performs that composer's sonatas on the piano himself. Moreover, as John Davidson points out in his liner notes here, Fernando Valenti, who built his reputation largely on his harpsichord performances and recordings of Scarlatti's sonatas, actually dedicated his edition of them to Alicia de Larrocha--which may serve not only to settle the question of the piano's appropriateness but also to certify Larrocha's own authority as interpreter of this music. It is noted also that it is Valenti's numbering that is used here, since key signatures are not indicated, it becomes troublesome to identify these works according to their respective Longo or Kirkpatrick numbers. In the case of the Soler sonatas, we are advised that the numbering of Joaquin Nin's edition is used, but there are in fact no numbers indicated, only keys. In any event, the performances themselves leave little to be said. Larrocha's feeling for the music and her ability to communicate it are beyond question, and the recorded sound is most agreeably realistic.  R.F.

(Continued overleaf)
SOLER: Six Sonatas (see Scarlatti)

RECORDING OF SPECIAL MERIT

Tchaikovsky: Symphony No. 6, in B Minor, Op. 74 ("Pathétique"), Philharmonia Orchestra, Vladimir Ashkenazy cond. LONDON CS 7170 $10.98, © CS5 7170 $10.98.

Performance: Impassioned
Recording: Resplendent


Performance: Carefully measured
Recording: Rather hard-sounding

Vladimir Ashkenazy brings his recorded series of the mature Tchaikovsky symphonies to completion with a Pathétique that ranks with the very best. For those who like this peculiar hard and blatant sound quality. How much of that stems from the digital process and how much from the recording locale is impossible to say just from hearing the recording, which seems to have been rather tightly miked. As I have noted before, the least successful digitally mastered recordings seem to have been done in situations producing a type of acoustic overload that analog mastering can handle but which digital technology as yet cannot.

D.H.

Tchaikovsky: Variations on a Rococo Theme; Pezzo Capriccioso (see Elgar)

Wagner: Das Rheingold. Theo Adam (baritone), Wotan; Karl-Heinz Strzyzewski (bass), Donner; Eberhard Büchner (tenor), Froh; Peter Schreier (tenor), Loge; Siegmund Nimsigen (baritone), Alberich; Christian Vogel (tenor), Mime; Roland Bracht (bass), Fasolt; Matti Salminen (bass), Fafner; Yvonne Minton (mezzo-soprano), Fricka; Marita Napier (soprano), Freia; Ottrun Wenkel (contralto), Erda; Johanna Popp (soprano), Juno; Peter Priez (mezzo-soprano), Wellgunde; Hanna Schwarz (contralto), Flosshilde; Dresden State Orchestra, Marek Janowski cond. EU-RODISC 301 137-445 three discs $29.94.

Performance: Acceptable
Recording: Excellent

That glorious rainbow bridge through which the Nordic gods ascend to Walhalla in the closing moments of Das Rheingold once symbolized the dawn of the stereo age. Surely the London set OSA 1309, released in 1959, was a stunning representation of Wagner when seen through the lens of breakthrough in recording technique. That venerable set still makes a powerful impact, a tribute to those who produced it, but a glance at its distinguished cast cruelly reminds us of time's passing: the Fricka, Erda, Loge, Alberich, Mime, and Fasolt are no longer living, and no other set matches the producer's fine and the recording, which seems to have been done in situations producing a type of acoustic overload that analog mastering can handle but which digital technology as yet cannot.

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D.H.


...
is full of expressive nuances yet free of exaggeration.

Theo Adam, with years of experience behind him, is an impressive and commanding Wotan when he can keep his tone under control—but this happens only about half of the time. I cannot point to any modern Wotan on records who is far superior, but Friedrich Schorr's 1927 recording of "Abendlich strahlt" will reveal to the interested listener how this music ought to be sung. As for the other gods, goddesses, gnomes, and the rest: Yvonne Minton is a competent but colorless Fricka; Marita Nagel's Nornedams is uneven but has some good moments; the Mime, the Donner, and particularly the Froh are tonally undernourished; and the harmonizing of the three Rhinemaidens is not irresistible. This is, in short, not an auspicious beginning for a new Ring, but then neither is this an age of great Wagnerian singing.

G.J.

COLLECTIONS

PLACIDO DOMINGO: Gala Opera Concert; Domingo!; Perhaps Love, with John Denver (see Best of the Month, page 78)


Performance Dazzling Recording Very good

It's odd to find August Wilhelmj's one-movement arrangement of the Paganini concerto together here with Fritz Kreisler's revision of the Schumann fantasy, for Kreisler too concocted a one-movement version of the Paganini, and he recorded it with Ormandy back in 1936—the same year he completed his Schumann revision. Personally, I think Kreisler's ideas about Paganini were more fun than Wilhelmj's, but I was fairly dazzled by Gidon Kremer's playing, and that's what this disc is all about. Yet another link to 1936 is the Czech composer Ladislav Kupkovic, who was born in that year. He describes his Souvenir as "a fusty memory of my early years, my Knabenjahr." He was a prodigy, and that's what this disc is all about. Yet another link to 1936 is the Czech composer Ladislav Kupkovic, who was born in that year. He describes his Souvenir as "a fusty memory of my early years, my Knabenjahr." He was a prodigy, and that's what this disc is all about. 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Popular Music Briefs

W e hadn't seen Loudon Wainwright III, the once and future New Dylan, in a couple of years, so we checked him out recently at a performance at New York's Bottom Line and got one of the bigger surprises of 1981. This was a guy who used to be downhill weird on stage, seemingly only one step away from The Real Edge at all times. Now he's a slick, professional entertainer who rebuts the spotlight and sends hecklers with the aplomb of Don Rickles. His audience has undergone a similar metamorphosis. Whereas in the old days he got the word freaks you might see at a Jackson Browne show (that is, they got his jokes the first time by), he's now inherited the collegiate beer guzzlers who yell "Play all night!" They know all his lyrics by heart, but they take his ironic misogyny absolutely straight. Loudon's songwriting remains as sharp as ever, and we had a good time, but calling the evening disconcerting would be an understatement. —S.S.

T he Beatles are back! Well, at least on film. The Fab Four's classic A Hard Day's Night (1964) has been sold to Universal Pictures, who plan a major rerelease in the spring of 1982. The movie's original producer, Walter Shenson, acquired the rights to it two years ago, and before dealing with Universal he remastered the soundtrack in Dolby stereo, which should be a treat for theatergoers. Unfortunately, no deals have yet been made for home tape or discs, either audio or video, with the new soundtrack.

F 0ck-and-roll is really dead, how come publishers are scrambling over each other churning out books about it? Cases in point: three fat new tomes on the subject that have crossed my desk this month. The first is David Dalton's The Rolling Stones: The First Twenty Years (Knopf, $13.95), which is the ultimate Stones coffee-table book. If you're like me, which is to say a lapsed obsessive fan, you're going to find that a lot of the material collected in it is familiar (some of it, in fact, is cribbed from Dalton's own decade-old unauthorized biography of the band), but most of it is valuable. Bill's and Keith's interviews with Guitar Player magazine in particular. You also get a definitive sessionography that lists every song, released and unreleased, the band has ever recorded; a blueprint of a custom guitar built for Keith by Ted Newman Jones; hilarious reprints of old fan pieces from 16 magazine; a chronological listing of all their drug busts; and the usual stunning pictures. The perfect gift for anybody who tried to get tickets for the recent Stones tour and couldn't (that's over
one million people in the New York area alone)

Then there's Christgau's Rocker's Guide (Ticknor & Fields, $9.95), in which Robert Christgau, self-styled “Dean of American Rock Critics,” reprints his Village Voice graded mini-reviews of just about every rock and related album of the Seventies (plus a selection of what he considers the best records from the Fifties to the Eighties). There's no use pretending this guy can't write; as a matter of fact, it was reading his stuff back in the early Seventies that inspired me to try to make a living at the critic's game. He's almost always fair, making the process of criticism seem less like a device to get the stuff back in the early Seventies that inspired me to try to make a living.

enthusiastic about scraping the ceiling when she wants to. Yet I haven't cared for most of the hackneyed little songs she's been singing lately. But Burnette re-creates it with freshness and fervor and without frills. —J.V.

Finally, let us praise The Book of Rock Lists, by Dave Marsh and Kevin Stein (Dell/Rolling Stone Press, $9.95), a more unabashedly subjective than you might imagine and perhaps the first rock book designed for john reading. No bit of trivia is too small, no opinion too outrageous for Marsh and Stein. These guys have a consistent vision for this kind of thing, which you might quibble with occasionally, but that these qualities are equally valuable. It's all here, from the world's shortest rock stars to Les Paul's favorite guitar players, from a listing of all the rock deaths by category to the list the five songs Carl Perkins was looking forward to writing, crammed with in-jokes, deliberately inflammatory, and always entertaining, this just may be the only rock book that matters. In Christgau's parlance, A+.

There are some real heavy rock-and-roll teams playing against each other: we've bowled with Iggy Pop and members of the Heartbreakers. Paul Cook comes along, he's a brilliant bowler; and singer, songwriter, who first cracked the charts with "Runaway in 1961, it is "well worth the wait." Then again, what did you expect him to say? Stiff Records threw a party recently to celebrate their new American offices in lower Manhattan. Pictured above at the bash are German punkette Nina Hagen; Stiff artiste Lene Lovich, who did a surprise set, former Meatloaf warbler and Pirates of Penzance ingénue Karla Devito; artist and designer Colette, and singer Melinda Jones, of Stiff's Hurricane Jones band.

This month's closing word comes from Elvis Costello, who opined after hearing the new Styx single, "I haven't the first idea who this is, and the only reason I'd want to is so I could avoid future encounters." I know the feeling. —S.S.

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**Susannah McCorkle**

If the late E. Y. "Yip" Harburg's sole contribution to the American songbook had been his lyrics for *The Wizard of Oz*, we would not soon forget him, but the usually witty, always clever word manipulations of this Tin Pan Alley poet neither began nor ended with the yellow brick road. Whether we know it or not, all of us have stored with which she has been delighting American and European audiences for the past few years.

When planning "Over the Rainbow," a new album on which she sings fourteen Harburg lyrics (mostly written in collaboration with composer Harold Arlen), Miss McCorkle paid Harburg a visit and found him cooperative to the extent that he updated some of his songs just for her. That should heighten interest in the set, but, even without Harburg's (re)finishing touches, the tribute is an enduring document performed by a fine singer who quite clearly not only understands the humor and sophistication of her material but cherishes it as well. Add to that the fine accompaniment of pianist Keith Ingham and trio, some informative, well-written notes by Max Wilk, plus a personal reminiscence of Harburg by Miss McCorkle, and you have a slice of Americana to be treasured for as long as the vinyl holds out.

—Chris Albertson

**SUSANNAH MCCORKLE: Over the Rainbow.** Susannah McCorkle (vocals); instrumental accompaniment. Old Devil Moon; Moanin' in the Mornin'; Poor You; Napoleon; If I Only Had a Heart; The Begat; Thrill Me; Ding, Dong the Witch Is Dead; Over the Rainbow; What Is There to Say?; Happiness Is a Thing Called Joe; The Eagle and Me; Down with Love; Here's to You; Your Illusions in Times Like These. INNER CITY IC 1131 $7.98.

**JOHN DENVER/PLACIDO DOMINGO: Perhaps Love** (see Best of the Month, page 78)

**THE ELEKTRICS: State of Shock.** The Elektrics (vocals and instruments). When the Night Comes Down; 1981 Overture; Go Now; Another Knife in My Heart; and six others. CAPITOL ST-12162 $8.98, © 4XT-12162 $8.98, © 8XT-12162 $8.98.

Performance: **Good** Recording: **Good**

I liked the Elektrics' debut album last year, and this one is a good follow-up. There's a little more attention to electronic effects this time, but they're not distracting or overpowering. The Elektrics have also appropriated—perhaps at the suggestion of their producer, Tony Bongiovi—some less-is-more restraint.

Go Now is a simple reading of the Moody Blues' original from 1964. *Pretty Plastic*, the Elektrics' own composition, kids artificiality and uses a background voice intoning the title in a West Indian accent (the group is from New Jersey). *When the Night Comes Down* is sung in a British accent and comes across better here than they have so far in studio recordings. Ely and his band are a little let down by this one, but the Elektrics' own composition, kids artificiality and uses a background voice intoning the title in a West Indian accent (the group is from New Jersey). *When the Night Comes Down* is sung in a British accent and comes across better here than they have so far in studio recordings. Ely and his band are a little let down by this one, but the Elektrics' original, "Pretty Plastic," is a good follow-up. There's a little more attention to electronic effects this time, but they're not distracting or overpowering. The Elektrics have also appropriated—perhaps at the suggestion of their producer, Tony Bongiovi—some less-is-more restraint.

**JOE ELY BAND: Live Shots.** Joe Ely Band (vocals and instruments). Fingernails; Midnight Shift; Honky Tonk Masquerade; Honky Tonkin'; Long Snake Moan; I Had My Hopes Up High; and eight others. SOUTHCOREST MCA-5262 two discs $7.98.

Performance: **Muscular** Recording: **Good**

The LP was recorded live in England while the Joe Ely Band was on tour with the Clash, and the four-song bonus EP was recorded live in Texas. Both Ely and his band come across better here than they have so far in studio recordings. Ely seems much more relaxed and sure of himself, and there's a sort of attractive recklessness about the way the group plays. Of course, there's also a relentless, almost obsessive about it that may prove wearing—this is a bar band whaling away most of the time. Still, it would be good if Ely could catch this same spirit in the studio.

**RICHARD "DIMPLES" FIELDS: Dimples.** Richard "Dimples" Fields (vocals);
vocal and instrumental accompaniment. I Like Your Lovin'; Let Me Take You in My Arms Tonight; Lovely Lady; She's Got Papers on Me; and five others. BOARDWALK NBI 33232 $8.98, © NBT 33232 $8.98.

Performance: Truly refreshing
Recording: Very good

What an unexpected delight this album turned out to be. Richard Fields, dimples and all, is making his debut here, and a most promising one it is. He has carved out a style that blends the easygoing tempos of Fifties r-&-b with the spit and polish of contemporary techniques. He wrote all the songs here except the r-&-b classic Earth Angel, and they are better than average, but his voice is his major asset. He sings in a high, light, almost girlish voice, the like of which hasn't been heard since Smokey Robinson, Curtis Mayfield, and Little Anthony were lads, yet tonally he sounds nothing at all like them. If anything, there is a touch of Sam Cooke in his sound, though it is distinctively his own. The songs here should catch on, among them Let Me Take You in My Arms Tonight and Let the Lady Dance. And the humorous conclusion of She's Got Papers on Me underscores the point here: Richard Fields has everything he needs to pull him out of the crowd and into the spotlight.

P.G.

CRYSTAL GAYLE: Hollywood, Tennessee. Crystal Gayle (vocals); instrumental accompaniment. Keepin' Power; The Woman in Me; Ain't No Sunshine; Hollywood; Love Crazy Love; Tennessee; and four others. COLUMBIA FC 37438, © FCT 37438, © FCA 37438, no list price.

Performance: Mixed
Recording: Very good

This is a crazy, mixed-up bag of songs and of ways to sing them. Four were written or partly written by Roger Cook, the old British rocker who has founded a sizable establishment in Nashville, and each of those is out of whack in one way or another—averaging, among other things, about one non sequitur per verse. For some reason, Gayle and company take a lighthearted approach to two of the few songs here that deserve to be taken seriously, Bill Withers' Ain't No Sunshine and Lean on Me. The former is actually done in an addepiated Sister Sledge manner. Gayle is at her best here in Susan Marie Thomas' The Woman in Me, which deftly outlines the genuine modern quandary of balancing the needs for freedom and closeness to another person, and in the old (1961), simple, straightforward, and pretty Carole King/Howard Greenfield song Cryin' in the Rain. All in all, I find this album disappointing but not uninteresting. It's a good puzzler if you like to try to figure out why people do things.

N.C.

GENESIS: ABACAB. Genesis (vocals and instrumentals). ABACAB; No Reply at All; Keep It Dark; Dada; Lurker; and five others. ATLANTIC SD 19313 $8.98, © CS 19313 $8.98, TP 19313 $8.98.

Performance: Nondescript
Recording: Passable

Years ago, I thought Genesis would be better off if they could shuck their silly goth-
CIRCLE NO. 43 ON READER SERVICE CARD

CIRCLE NO. 23 ON READER SERVICE CARD

IC... um... world-view. Lately, I'm being proved wrong. Dullness is turning out to be worse than ever. On their new album the boys thrash their way through a lifeless, styleless mess of repetition and garbage that makes me pine for the crazy-quilt amateurishness of the old songs about chopping off dolls' heads, etc., and they play as if they aren't sure what they want to sound like. Electronic keyboards still dominate, but here Genesis threatens to become addicted to incredibly boring riff accompagniments. There is one song, "Phil Collins' Man on the Corner"—reminiscent of the work in his solo album—that's an exception to the prevailing dreariness, as are Collins' vocals in a couple of other places. By and large, though, it sounds like an attempt to make a splash of a lot.

HALL AND OATES: Private Eyes. Daryl Hall and John Oates (vocals and instruments); instrumental accompagniment. Private Eyes, Looking for a Good Sign; Mano a Mano; I Can't Go for That (No Can Do); Friday Let Me Down; Head Above Water; and five others. RCA AFI-4028 $8.98, © AFS1-4028 $8.98, © AFS1-4028 $8.98.

Performance: Professional
Recording: Loud

I have never cared much for Hall and Oates, though I admire their craftmanship. They write very serviceable pop tunes for the teen market and perform them with nervous energy and a sound that borders on the strident. I can understand the stridency, since their audience is fickle and if they don't keep coming up with hits they're finished. "Private Eyes" is a thin confection of would-be hits plus filler. I prefer the filler, since it's not quite as frantic though still relentless; Mano a Mano here is the best of that lot. Teen music has improved a lot in the last twenty-five years, but its basic appeal is still very limited. If Hall and Oates are trying to do something more worthy, it's not apparent here.

DEBBIE HARRY: Kookoo. Debbie Harry (vocals); instrumental accompagniment. Jump Jump; The Jam Was Moving; Chrome; Someone Goes to Joy, and four others. CHRYSLER CH 1347 $8.98, © CH 1347 $8.98, © 8CH 1347 $8.98.

Performance: Spooky
Recording: Good

Pauline Kael devastated the spoof genre in a New Yorker essay a few years ago, exposing the approach as one that says, in effect, "We're not going to take the subject seriously, but neither are we going so far as to be funny about it." Although the material here and the approaches to it aren't always spoofs in the usual half-assed sense, they come close, and give the album neither-fish-nor-fowl nature and to make it about as unsatisfying as all those mild, unfunny movies starring Tony Curtis. Debbie Harry, shorn of the brand Blondie (although Chris Stein is still around, writing songs with her and playing guitar) as well as shorn of hair down to her dark roots, judging from the cover photo, apparently can't decide whether to be tough or cute. Her ambivalence about this is clearer here than it has been in the past, which makes the album take on a sophisticated feel. The songs are choppily little things with a schoolyard flavor, taunting and obnoxious in an innocent, childlike way. Ironically, it's hard to imagine a track like a crisp morning not too far from the sea; the dash of salt in the clarity is reminiscent of the great Bonnie Raitt. Too bad Harry isn't just a little more interested in music.

RECORDING OF SPECIAL MERIT

BILLY JOEL: Songs in the Attic. Billy Joel (vocals, piano, synthesizer, harmonica); instrumental accompagniment. Los Angeles. Streetlife Serenade; She's Got a Way; Captain Jack; You're My Home. Summer, Highland Falls; and five others. COLUMBIA TC 37461, © TCA 37461, © TCT 37461, no list price.

Performance: Excellent
Recording: Good

Although "Piano Man" was the album that established Billy Joel, it wasn't until "The Stranger" in 1977 that his career moved into the superstar category. All of the material on this live album predates 1977, and most of it has been previously released in studio recordings. These tracks were made during a 1980 tour, and they are a continuous joy. Joel is a member of that small group of songwriters who are creating the new Golden Age of American pop. Someday the songs here will be analyzed as "early works" by the musicologists, but in the meantime we can just enjoy them as the bitersweet slices of young life that they are. Miami 2017 ( Seen the Lights Go Out on Broadway) may or may not benefit from the extra reverberation provided by recording in Madison Square Garden, and I very much doubt that Captain Jack absolutely requires the explosive treatment it receives here. Joel, however, says in the liner notes that these live tapes are in fact "much closer to the sound I originally." The production by Phil Ramone is glitzy but good.

RECORDING OF SPECIAL MERIT

GLADYS KNIGHT AND THE PIPS: Touch. Gladys Knight and the Pips (vocals); instrumental accompagniment. I Will Fight; If That'll Make You Happy; A Friend of Mine; God Is; I Will Survive; and four others. COLUMBIA FC 37086, © FCT 37086, © FCA 37086, no list price.

Performance: Good to marvelous
Recording: Very good

If there weren't anything else in this album, the closing track, I Will Survive, a Dino Farkas/Freddie Perren record song recorded solo and in live performance by Gladys Knight, would make it a "Recording of Special Merit." It's an emotion-charged song that's amazingly like one of Jacques Brel's anthems—or like something Millie Jackson would do in a quieter moment. The per-
SEPARATION, LEFT-TO-RIGHT. Uses test tones consisting of one-frequency response, 20 kHz to 25 Hz. Uses one-third octave high level and returns to a fixed low level. The level and quality of tone signal (16,000 and 16,300 Hz) that repeatedly swoops SRT14-A record contents.

IM distortion

transient response. recorded signal velocity, anti-skating compensation. advanced audiophile and professional to make precise measurements of chart recorders. and distortion analyzers. These tests permit the use of sophisticated measuring instruments. such as oscilloscopes. listener. Included on the record are a series of tests that call for the use of professionals too.

system response. And it details corrective procedures. It tells you what to listen for.

through the testing process. It explains the significance of each test. It tells you what to listen for. It clearly describes any aberrations in performance characteristics.

The usefulness of the SRT14-A is not confined to the nontechnical listener. Included on the record are a series of tests that call for the use of sophisticated measuring instruments, such as oscilloscopes, chart recorders, and distortion analyzers. These tests permit the advanced audiophile and professional to make precise measurements of transient response, recorded signal velocity, anti-skating compensation, IM distortion, and a host of other performance characteristics.

SRT14-A record contents

CARTRIDGE TRACKING, HIGH FREQUENCY. Consists of a two-tone signal (16,000 and 16,300 Hz) that repeatedly swoops to a high level and returns to a fixed low level. The level and quality of the audible 300-Hz "difference tone" indicates pickup quality and midrange imaging.

FREQUENCY RESPONSE, 20 kHz to 25 Hz. Uses one-third octave bands of pink noise, centered on twenty-nine frequencies over the audio spectrum, compared with reference tones at three levels.

SEPARATION, LEFT-TO-RIGHT. Uses test tones consisting of one-third octave bands of pink noise recorded in the left channel with reference tones in the right, to check leakage from left to right.

SEPARATION, RIGHT-TO-LEFT. Same as Test 3, with channels reversed.

CARTRIDGE TRACKING, LOW FREQUENCY. Uses a single 300-Hz tone that repeatedly swoops to a high level, producing buzzy tones if the cartridge is misadjusted or inferior.

CHANNEL BALANCE. Two random-phase noise signals, one in each channel, produce sounds heard separately to allow accurate setting of channel balance.

CARTRIDGE AND SPEAKER PHASING. A low-frequency signal alternates in and out of phase in the two channels to allow proper phasing of cartridge and speakers.

LOW-FREQUENCY NOISE. A very-low-level orchestral passage followed by a section of "quiet groove," allows analysis of low-frequency noise.

TURNTABLE FLUTTER. A passage of piano music is recorded three times with increasing amounts of flutter. The degree to which the record player's flutter "masks" the test passages indicates the severity of turntable flutter.

FREQUENCY-RESPONSE SWEEP, 500 Hz to 20,000 Hz, LEFT CHANNEL. A steady tone rises from 500 Hz to 20 kHz, allowing evaluation of system electrical response by instrument.

FREQUENCY-RESPONSE SWEEP, 500 Hz to 20,000 Hz, RIGHT CHANNEL. Same as Test 10, but in right channel.

TONE-BURST. The test signal is sixteen cycles on, same period off, sweeping from 500 Hz to 20 kHz, allowing evaluation of transient response of phono cartridges.

INTERMODULATION DISTORTION. A phono cartridge's intermodulation distortion can be measured directly using a standard IM meter designed to analyze an SMPTE signal.

ANTI-SKATING ADJUSTMENT. A specially designed signal allows adjustment of anti-skating force for best reproduction of high-level passages.

1000-HZ REFERENCE TONES. Four tones with recorded velocities that increase by 3-dB steps can be used to determine (by the comparison method) the recorded signal velocity on a disc recording.

FLUTTER AND SPEED ACCURACY. A 3,150-Hz tone recorded with great accuracy of speed provides the standard signal for use with a flutter meter or frequency counter.

STEREO SPREAD. A series of drum beats recorded out of doors provides a guide to optimum speaker placement for a subjectively satisfying stereo effect.

CHROMATIC OCTAVE. The tones of the "equal-tempered" octave from 440 Hz to 880 Hz are recorded with accuracy better than 0.1 per cent.

GUITAR TUNING TONES. The six notes of standard guitar tuning are recorded with accuracy better than 0.1 per cent.

The final step

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Televisiion addicts are familiar with the Gatlin Brothers, and those who watch the Tonight Show know how they came to name their new Columbia album "Not Guilty"; as a take-off on the Barbra Streisand/Barry Gibb album title "Guilty." The way Larry Gatlin explained it to Johnny Carson, it was a matter of pure whimsy, but there was an undertone to the whole thing. So presently Carson, like several talk-show hosts before him, obligingly touched on that undertone with a question about how the boys used to have an "image problem." Well, yes, the boys admitted, they used to be rough on hecklers and loudmouths, because they didn't want anything coming between their music and the people who had paid to hear it against a relatively quiet background.

I've puzzled over why such questions keep coming up. It must have to do with a sophistication gap between the Gatlins, especially Larry, and some of the good-old-boy Nashville establishment. A boy from West Texas, especially one who started out in the ville establishment, it was a matter of pure whimsy, but there was an undertone to the whole thing. So presently Carson, like several talk-show hosts before him, obligingly touched on that undertone with a question about how the boys used to have an "image problem." Well, yes, the boys admitted, they used to be rough on hecklers and loudmouths, because they didn't want anything coming between their music and the people who had paid to hear it against a relatively quiet background.

I've puzzled over why such questions keep coming up. It must have to do with a sophistication gap between the Gatlins, especially Larry, and some of the good-old-boy Nashville establishment. A boy from West Texas, especially one who started out in the snow-white purity of gospel music, is supposed to dig his toe in the sand and say, "Aw, shucks." But Larry, going down the hallway to yet another TV appearance (Tomorrow Coast to Coast), stumbles over a line painted on the floor and says, "Choreography by Jack Daniels." Or he tells Tom Snyder, as the conversation centers on the youngest of the Gatlin brothers, "Rudy's elevator doesn't go all the way to the top floor." Apparently there's something a little too citified in these one-liners, something a little too urbane about the Gatlin boys in general for some in the good-old-boy network. These lads aren't the bumpkins they're supposed to be. Probably they never were. They came from Odessa, Texas, sons not of a ranch hand but of an oil driller. Working-class, yes, but townies. Their taste in music wasn't shaped exclusively by the twang of steel guitars and Faded Love sung in a Southwestern drawl.

"We had an uncle who played piano," Larry told me when I had breakfast with the brothers in New York between their Tomorrow and Tonight appearances. "He was a great piano player, and he liked jazz. He'd sit us down, play an Ella Fitzgerald record, or Oscar Peterson. We started in gospel music—we liked the Blackwood Brothers, the old Southern-style gospel groups—but we were exposed at an early age to several kinds of music, and we still listen to everything from country to jazz to classical."

Of course the boys have become more worldly through the years, Larry particularly. I first met him several years ago at a session in Nashville where someone was recording one of his songs. Steve and Rudy were still in college then; Larry was trying to establish himself mainly as a songwriter (he did, of course, and now writes all the songs the boys perform). He was the picture of humility, and I remember wondering how such a nice, unassuming young man could avoid being eaten alive by good old Music City. The Larry Gatlin I met in New York was much more at ease with himself and other people, and quite a bit funnier.

Both he and Rudy seem to look at a situation first for any joke that might be wrung from it. Steve, the bass player, the middle brother in age, bearded and built like a runner, is more serious and says, "I guess I'm a little more business-oriented than Larry or Rudy." Steve is the one agents and managers depend on to have the Gatlin Brothers where they're supposed to be when they're supposed to be there. The Gatlin humor, though, has very little corn pone in it, and I suppose that suggests to some people that they would rather spend concert intermissions selfishly tuning their instruments and getting their throats together than signing autographs.

Like many country-bred acts, they recognize television as the people's medium and a good place to be more or less regularly. "We've been looking into the video disc and tape business too," Steve said.

"I think there's going to be a video explosion," Larry said. "You can already get a disc player for 500 bucks."

Rudy was not so sure people would want to play a video disc enough times to get their money's worth. "The price of software could keep people from buying some things."

"But we've got an advantage," Larry said, "with music being the main thing about us. People like to hear the same audio before they're supposed to be there. The Gatlin house is a good place to be more or less regularly."

Larry grabbed the microphone of my tape recorder, pulled it up close and said, "I want the world to know I drive a CBS car, sleep in a CBS bed, and put my bread in a CBS toaster."

The conversation meandered amiably to various topics, including the talent of Larry Bird, Boston Celtics forward. "We can talk about sports all day," Larry said. "And we will, if you don't watch out," Rudy said. All three Gatlins make no bones about being competitive by nature, even through their jobs. "They see it, is being harmonious. "Singing together comes before everything else," Steve said.

"There definitely is something to this 'family harmony' business," Larry added. "The best harmony singing has always been done by members of a family. Look at the Mills Brothers, the Ames Brothers...

"The Statler Brothers," Rudy said.

"Only two of them are brothers," Steve said.

"Yeah," Larry said, "only two of them are good! No, they're good friends of ours and we like to kid them. But really, we naturally sound a little more alike than three people who aren't related. We have the same physical make-up, the sounds come from similar sorts of places."

Their favorite singers now include George Jones—which brings on another series of asides: "Is he still on the wagon?" "Who knows? How can you tell?" "Maybe by the wake of destruction behind him"—and Roy Orbison, who came from the Gatlins' part of Texas.

"They used to make fun of him down there," Larry said. "Didn't know what to make of him. But I'll tell you, Orbison can sing tenor to a dog whistle."

The new album, like all their music, is...
grounded in country and gospel, but its lyrical specifics seem to pertain only to the Gatlins.

"We identify with country music," Rudy said. "I'd hate to see what happened to discountry."

"Some types of music can't last the way country does because the music doesn't have a lifestyle to back it up," Steve said. "Country music is based upon what real people do and think and feel."

The most striking song in "Not Guilty" is "Rain," a song about being totally down and out and desperate without necessarily being what the world considers a prostitute or wino or angel. Larry wrote it ten years ago, sent a tape to Dotty West, and Kris Kristofferson heard it at her house. The result was the first Gatlin recording contract, with Monument Records.

"Country music is based upon what real people do and think and feel," Steve said.

Beyond that, the album consists mostly of love songs. Larry keeps writing them to his wife Janis, he says. (Both he and Steve seem happy to be happily married, while Larry is a "carefree" bachelor who says he worries more than he's given credit for. Larry and Janis have a son and a daughter, and Steve and Cynthia have a daughter.) "I like love," Larry said. "I think it's neat."

"Not Guilty" is not consistently the strongest writing Larry has ever done, but it has that unmistakable Gatlin way with words and interval, and of course those muscular, booming harmonies. "I'm not sure why our stuff doesn't sound like other people's," Larry said. "It's too complicated to analyze—jazz listening and childhood gospel singing swished together with growing up in a musical hodgepodge like Texas—but we've always had our own sound. We're grateful for that."

—Noel Coppage

LARRY GATLIN AND THE GATLIN BROTHERS BAND: Not Guilty... Larry Gatlin (vocals, guitar); Steve Gatlin (vocals, bass); Rudy Gatlin (vocals, guitar); instrumental accompaniment. She Used to Sing on Sunday; Can't Take It with You; Rain; Hard Workin' Hands; My Last Love Song; Sing on Sunday; Someone Else's Day; Good Wilbur; You Wouldn't Know Love; What Are We Doing Lonesome. COLUMBIA FC 37464, © FCT 37464, © FCA 37464, no list price.

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Little Feat. You keep hearing just enough to expect great things next time. But "Hoy- hoy" is much more like a "real album" than most posthumous out-take collections are. If you were a fan, you'll have to have it; if not, fifteen bucks may seem pricey. N.C.

AMANDA McBROOM: West of Oz (see Best of the Month, page 81)

RECORDING OF SPECIAL MERIT

GEOFF MULDAUR AND THE NITE LITES: I Ain't Drunk. Geoff Muldaur (piano, guitar, vocals); vocal and instrumental accompaniment. Boogie Chillin' It: Natural Ball; Down for the Count; As Long As I'm Moving; Cadillac; and five others. HANNIBAL/ANTHILLES HNBL 1304 $7.98.

Performance: Very good
Recording: Good

Geoff Muldaur, an old folkie and jug-band addict from the Sixties, is now selecting sundry juicy items from the Chicago and Memphis blues styles. He has put together a good-time group that blows for the hell of it, and it's sheer pleasure to hear them.

"Boogie Chillin' It" is a slight update of the original by John Lee Hooker; "Meanness Woman Blues" is an amalgam of lyrics from several Howlin' Wolf songs with a riff that neat maus trapst at the end of the cut; and "Sea Sea Rider", a traditional blues from New Orleans, features background voices that lap up like waves on a beach. All these feature Muldaur; Bassist Sarah Brown purrs and slinks her way through the vocals on "That's How I Feel About You" and "As Long As I'm Moving". "Kaz" Kazanoff, who plays sax and harmonica, has a ball with Albert King's "Natural Ball" and sings with happy abandon on "Caldonia", and lead guitarist Tom Principato chuckles his way through "I Ain't Drunk" as well as providing some very solid and commendable playing on the instrumental "Down for the Count". You should have as good a time hearing this album as Muldaur and his merry mob did in making it. I did. J.V.

RECORDING OF SPECIAL MERIT

NOVO COMBO. Novo Combo (vocals and instrumentals). Up Periscope; City Bound ("E" Train); We Need Love; Tattoo; Don't Do That; Hard to Say Goodbye; and five others. POLYDOCTOR PD-1-6331 $8.98, © CT-1-6331 $8.98.

Performance: Very good
Recording: Very good

This quartet plays some of the tightest and most sophisticated rock that I've heard in a long time. The singing (by Stephen Does) is versatile, the arrangements are flexible, the execution (especially Michael Shrieve's drumming) is precise without being clinical, and the material is 'way above average. The guitarists in the group (Jack Griffith and Peter Hewlet) play about a quarter of what rock guitarists usually play—which is to say that they know exactly what a tune needs and give it just that much. An effective riff, carefully placed, is worth more than a dozen long solos.

Chris Kimsey, who's worked with the Rolling Stones, produced this date with a balanced sound and drew some first-rate performances from the group. Novo Combo is good news. J.V.

RECORDING OF SPECIAL MERIT

TEDDY PENDERGRASS: It's Time for Love. Teddy Pendergrass (vocals); vocal and instrumental accompaniment. Nine Times Out of Ten; Keep On Lovin' Me; It's Time for Love; and five others. PHILADELPHIA INTERNATIONAL TZ 37491, © TZT 37491, © TZA 37491, no list price.

Performance: Unexpectedly tender
Recording: Very good

In an amazing about-face, Teddy Pendergrass seems to be refashioning his image, abandoning his loincloth-and-club macho-caveman approach for the trappings of tenderness. This is not to say that he is dissolving into mush, for his basic appeal is still as taut and magnetically attractive as ever. However, he demonstrates here that he can handle a ballad as sweetly as any crooner, projecting a kind of breathy anticipation with his voice while retaining a touch of a swagger in his style. Unlike the Pendergrass of yester-record, he even sounds sincere as he wends his way through lyrics about "pure ecstasy" and the softer elements of love. There are a few faster numbers here, but even on these the mood remains intimate and embracing. The songs and arrangements appear to have been tailored

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McCoy Tyner

McCoy Tyner is one of the most original and influential jazz pianists of our time. Both an innovator and an internationalist, he has explored a diversity of forms and traditions during his career—African, Middle Eastern, Oriental—recasting each in the distinctive modal style (actually based on medieval harmonic concepts) he developed with John Coltrane. "La Leyenda de la Hora," new from Columbia, is Tyner's first album devoted to Afro-Cuban music, a jazz tradition that has enjoyed uninterrupted popularity from Dizzy Gillespie's Cuban bebop to Chick Corea's Spanish fantasies. It may be an indication of Tyner's creative scope that he's only now gotten around to recording in this vein, revealing the full and sometimes unexpected expressive possibilities of Afro-Cuban jazz. It's a masterly album by a true contemporary master.

—Mark Peel

McCoy Tyner: La Leyenda de la Hora (The Legend of the Hour)

McCoy Tyner (piano); Hubert Laws (flute); Bobby Hutcherson (vibraphone, marimba); Paquito D'Rivera (alto and soprano saxophones); Chico Freeman (tenor saxophone); Marcus Belgrave (trumpet, flugelhorn); Avery Sharpe (acoustic bass); Ignacio Berroa (drums); Daniel Ponce (percussion); other musicians. La Vida Feliz (The Happy Life); Ja'Cara (A Serenade); La Habana Sol (The Havana Sun); Walk Spirit; Talk Spirit; La Busca (The Search). Columbia FC 37375, © FCT 37375, no list price.

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COLUMBIA FC 37494, © FCT 37494, © FCA 37494, no list price.

Performance: Hard-breathing
Recording: Excellent

Last time I saw Rex Smith he was cavorting about the stage of the Uris Theatre in New York in pirate costume playing Frederick, the Slave of Duty, in Linda Ronstadt's Mus- 

cel in a freewheeling production of Gilbert and Sullivan's The Pirates of Penzance. For his new album, he has left the rocky coast of Cornwall for the rock beat that originally brought him to prominence, singing sexy, double-entendre ballads. Smith has a strong, sweet baritone voice that he uses mercilessly to the limit. He pants and moans like a sailor just arrived in port through a series of songs that must be enough to drive any susceptible young girl crazy. There is one touching ballad called Still Thinking of You that redeems the whole program, and when he sings Ever-

Ling, Do You Know Where Your Children Are? and Unborn Child, apparently inspired by the long-drawn-out tragedy that traumatized Atlanta's black commu- 
nity. It's a Long Way to the Top; Do It Now; There Is No Limit; You; Fool's Story, Sweet's singing here is her best on the album.

Fool's Story is a lackluster song, but it's

notable for the impressive way Sweet treats the blues. Her other material tends a bit to-
ward the macabre, as in Billy and the Gun, a sinister thing about a boy who plays Rus-
sian roulette. The commercial tracks are just that—safe, sure, and dull, especially the Phil Spector medley Be My Baby/Then He Kissed Me, which is a waste of Sweet's talent and the listener's time. It's too bad no one at Columbia bothered to select better
material for a performer who's been a pro since she was small, who has acting experience and a sense of humor. But, as I said, I'm a
fan, so I'll wait for her next album and hope it suits her talents better.

KOKO TAYLOR: From the Heart of a Woman.
Koko Taylor (vocals); Chris Johnson, Sammy Lawhorn, Emmett "Maestro" Sanders (guitar); Billy Branch (harmonica); A. C. Reed (tenor saxophone); Bill Heid (keyboards); Cornelius Boysson (bass); Vince Chappelle (drums).

Something Strange Is Going On: I'd Rather
Go Blind; Keep Your Hands Off Him; Sure
Had a Wonderful Time Last Night; Blow
Top Blues; If Walls Could Talk; and four others. ALLIGATOR AL 4724 $7.98.

Performance: Excellent
Recording: Very good

Chicago is still, as the song says, "that tod- 
dlin' town" so far as urban blues are concerned, and Koko Taylor is one of its lead-
ing lights. She is a blues shouter par excel-
ence, but she knows how to hold back for effect before letting go full blast, and her scrappy combo is with her all the way.

Something Strange Is Going On, about skullduggery in the household, recalls Some-
body in My Home by another great Chica-
go blues singer, the late Howlin' Wolf. Koko wrings all the tears out of I'd Rather
Go Blind, and she's mean as can be on
Leonard Feather's Blow Top Blues, charm-
ingly comic with Louis Jordan's goofy Sure
Had a Wonderful Time Last Night, and worldly wise on If Walls Could Talk.

Koko's a big-hearted woman with a mighty
talent. She and the blues are good for each other, as I think you'll agree if you hear this album.

TYCOON: Turn Out the Lights.
Tycoon (vocals and instrumen-tals).

This Island Earth; One More Try; Hang On In; Can't Take That Away; Turn Out the Lights; Let It Down; and four others. ARISTA AL 9555

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WILLIAM L. PHILLIPS, 
Assistant Treasurer
A friend of mine who also writes about popular music recently observed to me that contemporary rhythm-and-blues has become so limited thematically that all you hear are love songs or dance songs. The current unwillingness of artists and the music industry to tackle more significant subjects seems strange considering that this music is an offshoot of the emotional ferment of the blues and has in the past been nurtured by social tumult, frequently providing explicit reflections of the mood of grassroots black America.

In this climate, the searing social commentary of Gil Scott-Heron is especially striking. Unlike his peers, he is not afraid to seem a throwback to more outspoken times. Although protest songs are no longer in vogue, Scott-Heron remains a committed wave maker, sweeping out onto the beach of public awareness such disturbing matters as drug abuse, poverty, police brutality, and international conflict.

In recent years Scott-Heron has collaborated with pianist-composer Brian Jackson to create a series of albums leaning heavily on popular soul-music motifs. However, his new Arista album, "Reflections," features him without Jackson, backed instead by an octet of instrumentalists oriented more toward jazz than pop. "Reflections" is thus musically richer than many of Scott-Heron's previous sets, but, as before, its greatest appeal lies in the lean directness of his abrasive, poetic lyrics.

Easing the listener into his anger, Scott-Heron begins with an engaging reggae melody on Storm Music, which warns of escalating unrest and coming retribution by Third World countries. Backing off a bit, like a skilled boxer, he suddenly shifts to nostalgic reminiscence in the Bill Withers classic about the soothing properties of Grandma's Hands, then follows through with the moody sensuality of his own Morning Thoughts. But though Scott-Heron's day might begin with warm moments in bed, it moves on to more global musings and compelling entreaties to pay attention to what is happening in Zimbabwe, El Salvador, Namibia, and Poland.

Marvin Gaye's Inner City Blues introduces the second side, which consists of several extended song-poems. Abounding in references to persistent unemployment, racial unrest, and the need for gun control, they are the heart of the album's message. There's no missing Scott-Heron's target when he begins one track here with the startling comment, "Mandate my ass," and no less startling is his observation that "The Arabs used to be in the Third World/They have bought the Second World and put a firm downpayment on the First one/Controlling your resources will control your world." Throughout, the tone is stonily grim, and Scott-Heron's discourse is supported by a thumping, almost hypnotically rhythmic background that underscores the bitterness of his words.

You might not agree with what Gil Scott-Heron has to say, but you're bound to have some reaction to hearing him. He may be a voice in the wilderness, a discomfiting reminder of the upheavals of the Sixties and of current problems we'd rather ignore, but the power of his words and music makes him a voice well worth listening to.

—Phyl Garland

GIL SCOTT-HERON: Reflections. Gil Scott-Heron (vocals, electric piano); instrumental accompaniment. Storm Music; Grandma's Hands; Is That Jazz?; Morning Thoughts; Inner City Blues; Gun; "B" Movie. ARISTA AL 9566 $8.98, © ACT 9566 $8.98, © AT8 9566 $8.98.

Gil Scott-Heron. C.A.

Stereo Review
CHET BAKER: Broken Wing. Chet Baker (trumpet, vocals); Phil Markowitz (piano); Jean-François Jenny Clark (bass); Jeff Brillinger (drums). Oh You Crazy Moon; Black Eyes; and two others. INNER CITY IC 1120 $7.98.

Performance: Gentle
Recording: Good

Chet Baker’s soft horn and velvety vocals reached way beyond the boundaries of jazz twenty or so years ago when his was a household name on campuses and in “hip” circles. He seemed to bridge the wide gap between what was oh-so-terribly “in” and what was just as decidedly “out.” This is not to imply that Baker ever qualified for a household name on campuses and in “hip” circles. He was an ensemble sound with no outstanding soloists, and today, forty years later, he is still very accessible while other big-name soloists, and today, forty years later, he lacked substance, but there was a prettiness about it that few could resist.

The gentle beat goes on in “Broken Wing,” a 1978 album recorded in France and recently released here by Inner City. Baker, accompanied by a capable but unexciting piano trio, caresses five tunes, running his horn up, down, in, and out of melodies that will often be familiar to you. He also sings on Oh You Crazy Moon, demonstrating that there has been no change in his vocal style either. The album won’t make you do cartwheels across the room, but it’s very comfortable.

C.A.
RODNEY CROWELL. Rodney Crowell (vocals, guitar); Albert Lee (guitar); Hank DeVito (steel); Emory Gordy (bass); Larric Londin (drums); other musicians. Stars on the Water, Just Wanta Dance; She Ain't Going Nowhere; Shame on the Moon; Only Two Hearts; Victim or a Fool; Ain't You Got to Do, 'Til I Gain Control Again; Old Pipeline. WARNER BROS. BSK 3587 $8.98, © M5 3587 $8.98.

That heady period, and you can hear that the group's spirits were high. Barnet's principal idol as a bandleader was Duke Ellington, and relations between the two bands were cordial. Ellington's trombonist, Juan Tizoli, collaborated with Barnet on Lazy Bug; Charlie, in turn, was happy to record Tizoli's Night Song as well as the Duke's Echoes of Harlem, The Gal from Joe's, and Lament for a Lost Love. Barnet's originals, such as Knockin' at the Famous Door and Scotch and Soda, are, as they used to say, "solid senders." This collection also includes his biggest hit, Cherokee, written by Ray Noble as a ballad and arranged for a hot treatment by young Billy May, who had recently joined Barnet. As with all bands in that era, Barnet was instructed by his label to record a certain number of ballads from music publishers' stockpiles. These were meant to be dreamy but were mostly droopy. Singer Judy Ellington, who tried to sound something like Billie Holiday and came fairly close, makes most of those here tolerable. Barnet and his guys paid no more attention to the ballads than was necessary, reserving their energy for the jump numbers. This was a band that loved to swing, and it still shows. J.V.

RODNEY CROWELL'S latest is the kind of record that makes you want to get out an instrument, a couple of spoons, or something and join the fray. Mostly it exercises the rollicking, rocking side of Crowell and his band, the Cherry Bombs; he knows how to write a rock song and they know how to play it.

It may be a little thin on material overall; Crowell uses two other people's songs, She Ain't Going Nowhere by Guy Clark, which is fair to middling and never sounded this good before, and Keith Sykes' Just Wanta Dance, which isn't very interesting. And a couple of the new Crowell songs are pretty sketchy too, although they're played with such a combination of zest and nuance, taste and spontaneity, that it doesn't seem to matter very much how bony they are underneath.

But then he includes his own exceptional reading of 'Til I Gain Control Again, the country song he wrote in 1976 that is, to my reading of 'Til I Gain Control Again, the number one country song he wrote in 1976 that is, to my mind, a bona fide classic. (There are now three "definitive" versions of it, if you will: by Emmylou Harris, by Waylon Jennings, and by Crowell himself.) It doesn't quite fit this particular program, perhaps, but the program is fluid and varied, forever changing tempo and mood. The other standout song is Shame on the Moon, which tells a lot of truth in a very few words. And then Stars on the Water sort of sneaks up on you, too. Generally, I'd like for Crowell to aim a little higher, but you've got to hand it to a man who can fire such a tight pattern into the bullseye area of the viscera. Just try listening with a still foot. —Noel Coppage

DUKE ELLINGTON: Sophisticated Ellington. Duke Ellington (piano); various orchestras, Duke Ellington cond. Take the "A" Train; Caravan; Mood Indigo; Solitude; Hey Baby; I Got It Bad; Perdido; The Mooche; Black and Tan Fantasy, and fifteen others. RCA CPL2-4098(e) two discs $11.98, © CPK2-4098 $11.98.

Performance: Very fine Recording: Variable

Twenty-four of the inimitable Duke Ellington's performances, recorded between 1927 and 1966, are presented in this economical reissue (it is economically packaged, too—there are no liner notes, and the two discs are jammed into one sleeve). The three performances I found most interesting were a 1934 Solitude awash in a silvery Art Deco shimmer (it easily transcends the fuzzy recording sound of those days) and Creole Love Call and Black and Tan Fantasy from 1927. The latter two demonstrate clearly that the energy and vitality Ellington poured into his work during his long career were present right from the beginning, as was his remarkable ability to fuse so-called "race" music, mainstream American pop, and his own worldly gifts into true art. He was one of the authentic greats of American music, and we ought to be grateful that he recorded as much as he did. P.R.

RECORDING OF SPECIAL MERIT

PANAMA FRANCIS & THE SAVOY SULTANS: Volume II. Panama Francis (drums); Francis Williams, Irv Stokes (trumpet); Norris Turney (alto saxophone, clarinet); Howard Johnson (also saxophone); George Kelly (tenor saxophone); Red Richards (piano); John Smith (guitar); Bill Pemberton (bass). Shipyard Social Function; Norfolk Ferry; Second Balcony Jump; Looney; and three others. CLASSIC JAZZ CJ 150 $7.98.

Performance: Excellent Recording: Wayward

The original Savoy Sultans were the house band at Harlem's great old Savoy Ballroom—"The Home of Happy Feet"—which opened in 1926. The Sultans' reign lasted from 1937 until 1945. They had no solo stars, but the hard-driving arrangements by tenor saxophonist Al Cooper gave the band an ensemble sound that on many occasions intimidated the alternating star bands of Count Basie, Fletcher Henderson, Lucky Millinder, and Claude Hopkins. The Sultans didn't kid around. This reincarnation of the group was formed by drummer Panama Francis a few years ago, using some original arrangements by Al Cooper and by George Kelly, the only former Sultan in the group, as well as charts by Chick Webb, Tab Smith, Lucky Millinder, and Francis himself. It's a superbly swinging outfit, blowing with an infectiously happy abandon. What a wonderment they are! This is red-hot jazz at its best, and I am delighted that any band today plays with such joy. Although the playing time is nearly forty minutes, the album ends too soon. Encore! J.V.
CHICO FREEMAN: The Outside Within
(see Best of the Month, page 82)

RECORDING OF SPECIAL MERIT

CHARLES MINGUS: Mingus at Monterey. Charles Mingus (bass); other musicians. Duke Ellington Medley; Orange Was the Color of Her Dress. Then Blue Silk; Meditations on Integration. Prestige P-24100 two discs $8.98.

Performance: Still fine
Recording: Good remote

The 1964 Monterey Jazz Festival was an overwhelming success in terms of both the income it generated for its producers and the music it provided the approximately 30,000 ticket holders. A highlight of the festival was a Sunday afternoon concert by Charles Mingus, who played with his own regular group and with a larger one assembled for the occasion by saxophonist Buddy Collette. "Mingus at Monterey," originally released under that title on Mingus' own Jazz Workshop label, is a Prestige budget-priced "twofers," captures the beauty and studied chaos of that event. It is a glorious set that opens with a twenty-four-minute Ellington medley and closes with a twelve-minute masterpiece entitled Meditations on Integration. That alone makes this release a bargain, but there is more, a tune also excel on the Ellington trek (catch Byard's stride solo on Take the "A" Train). This is the kind of album one can write whole articles about, but the next best thing to hearing it is reading Mingus' own notes, which have wisely been reprinted intact. Get it while you can.

C.A.

RECORDING OF SPECIAL MERIT

RED NORVO QUINTET: The Forward Look. Red Norvo (vibraphone); Jerry Digin (pl.) alto saxophone); Jimmy Wyble (guitar); Red Wolton (bass); John Markham (drums). Room 608; Ree Waahnee; For Lena and Lennie; and three others. Reference RR-8 $14.95. (From AudioSource, 1185 Chess Drive, Foster City, Calif. 94404).

Performance: A very good year
Recording: Fine early stereo

Vibraphonist Red Norvo's illustrious career has produced an impressive number of enduring recordings. His discography covers the Swing period well, makes an early crossing into Bop territory (by way of a 1945 date with Parker and Gillespie), and includes Dance of the Octopus, a 1933 item that fell outside all extant musical categories. Fortunately, Norvo's career continues today, but this most recent album release consists of material that has been aging gracefully for years. "The Forward Look," a 1957 "The Forward Look" documents a live session that was ostensibly taped in order to test an early three-channel recorder, and though that setup is modest by today's standards, neither the technical nor artistic quality of the recording suffers in comparison with many contemporary efforts.

Norvo had begun to perform regularly in January 1982
Las Vegas at the time, his trio and quintet soothing edgy gamblers' nerves at the Tropicana and the Sands with timeless music that flowed effortlessly through ripples of laughter and the hum of conversation. This album was recorded, however, at Outside at the Inside, a second-story Palo Alto coffee house where a more music-minded crowd had gathered to usher in the new year on the polished music of the Norvo quintet, a group whose driving swing and articulate teamwork could brighten the darkest of times. It should serve just as well to usher in the uncertainties of 1982.

C.A.

RECORDING OF SPECIAL MERIT
JOE PASS AND JIMMY ROWLES: Checkmate. Joe Pass (guitar); Jimmy Rowles (piano). So Rare; God Bless the Child; Deed I Do; Tis Autumn; Marquita; Stardust; and four others. PARLO 3 D2310865 $9.98, © CS10 3165 $9.98.

Performance: Fine team
Recording: Excellent

Guitarist Joe Pass and pianist Jimmy Rowles had not played together since the Sixties when they recorded "Checkmate" a year ago, but they are two fine raconteurs bursting with stories to tell and with the skill to interweave them without creating chaos. Their rapport makes them a joy to hear, and what they do is so filled with intriguing subtext that one can listen repeatedly and still discover new tidbits. The material is varied but familiar: it is how these two superb musicians convey it that makes it seem fresh and tantalizing. C.A.

RECORDING OF SPECIAL MERIT
DJANGO REINHARDT: Solos/Duets/Trios. Django Reinhardt, Pierre Ferret, Louis Gaste (guitar); Emmanuel Soudieux, Louis Vola, Eugene d'Hellemmes, Paul Cordonnier (bass); Stéphane Grappelli, Eddie South, Michel Warlop (violin). I'll See You in My Dreams; Improvisation; Christmas Swing; Boccain' Around; Alabama Bound; Tea for Two; Improvisation No. 3; Parts 1 and 2; You Rascal You, St. Louis Blues; and four others. INNER CITY © IC 1105 $7.98.

Performance: Genius
Recording: Good mono restoration

Inner City's second volume of gypsy jazz guitarist Django Reinhardt reissues, including many sides never before released in the United States, is another treasure trove. Django Reinhardt was, quite frankly, the greatest thing since sliced bread—maybe since breathing.

Django was at home in any musical setting, from solo sessions to big bands, and his best work (while he still played acoustic guitar) was between 1934 and the beginning of World War II. After the occupation of France by the Germans in 1940, word went around that he was dead, but during the liberation of Paris in 1944 he was discovered playing in a café. Of special note in this collection is the Improvisation No. 3, recorded in 1943; it's notable not only for Reinhardt's typical brilliance but that what the material is worthy, he's prettily much irresistible.

"Coup de Grace," his new Atlantic album, lacks the uptempo rock-and-roll punch of his earlier records, but it is, on balance, the most consistent he's done so far, soulful, dramatic, warmhearted in all the right ways—urban romanticism at its most compelling. Granted, I am a sucker for this kind of thing. I teetered on it, and to this day I get terminal goosebumps when I hear, oh, Ben E. King doing Stand by Me, or, on this album, the Exhilarations' velvety background vocals on Willy's remake of You Better Move On. The unconverted, on the other hand, may hear only pastiche, Van Morrison or Bruce Springsteen without the subtext. Like I said, genre art. But from where I sit, art it is, and I recommend it highly.

—Steve Simels

MINK DEVILLE: Coup de Grace. Mink DeVille (vocals and instrumentals); vocal and instrumental accompaniment. Just Give Me One Good Reason; Help Me to Make It (Power of a Woman's Love); Maybe Tomorrow; Teardrops Must Fall; You Better Move On; Love & Emotion; So in Love Are We; Love Me Like You Did Before; She Was Made in Heaven; End of the Line. ATLANTIC SD 19311 $8.98, © CS 19311 $8.98, © TP 19311 $8.98.

Mink DeVille: Genre Art

LIFE, my grandfather used to say, is like tuna fish; either you like it or you don't. Genre art is the same way, when you think about it; either you like, say, film noir, sword-and-sorcery novels, detective or science fiction, John Ford westerns, post-Joy Division doom rock, or you don't, and no amount of critical explication, however enthusiastic, is going to change your mind.

Willy DeVille (who is, for all intents and purposes, Mink DeVille) is a genre artist, the genre being slightly updated early-Sixties, New York City, Latin-tinged rhythm-and-blues. He is also a gifted songwriter, an excellent, idiomatic singer, and (lately) a mesmerizing performer. Plus he believes in every single word he sings, which means he is another treasure trove. Django Reinhardt reissues, including many sides never before released in the United States, is another treasure trove. Django Reinhardt was, quite frankly, the greatest thing since sliced bread—maybe since breathing.

Django was at home in any musical setting, from solo sessions to big bands, and his best work (while he still played acoustic guitar) was between 1934 and the beginning of World War II. After the occupation of France by the Germans in 1940, word went around that he was dead, but during the liberation of Paris in 1944 he was discovered playing in a café. Of special note in this collection is the Improvisation No. 3, recorded in 1943; it's notable not only for Reinhardt's typical brilliance but that it was recorded at all during that period.

Except for two 1939 dates, I'll See You in My Dreams and Echoes of Spain, all the remaining sessions are from 1937 when Django was at the peak of his youthful powers. Improvisation from that year is a tidal-wave display of almost violent romanticism (Continued on page 121)
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Sincere but never out of control

"Cleanhead" Vinson

W hen I heard Count Basie's recent "Kansas City Shout" album (Pablo D2310859) featuring Eddie "Cleanhead" Vinson and Joe Turner as vocalists, I wanted a whole album by Vinson. His phrasing, tone, and personality on Cherry Red and Just a Dream on My Mind were completely convincing.

Well, good things come to those who wait. Now Pablo has released a whole album by Vinson, "I Want a Little Girl," and what a treat it is! It's certainly not the first recording he's made as a leader, just the latest, and on it he is as close to perfection as any male jazz/blues singer is ever likely to be. His emotion is sincere but never out of control. "Cleanhead" is the kind of singer and musician who doesn't use to lance a human situation that's become ludicrously painful (Worried Mind Blues).

V inson is also a formidable alto saxophonist. John Coltrane worked in one of Vinson's bands and picked up more than a few ideas from him. Two instrumentalists here, Oscar Pettiford's Blues in the Closet and Thelonious Monk's Straight—No Chaser, are free-for-all jams for Vinson's accomplished septet, with the leader comfortably out in front. "Cleanhead" is the kind of singer and musician who doesn't just make you hungry for more—he makes you greedy for more.

—Joel Vance

EDDIE "CLEANHEAD" VINSON: I Want a Little Girl. Eddie "Cleanhead" Vinson (vocals, alto saxophone); Art Hillery (piano, organ); Cal Green (guitar); John Heard (bass); Roy McCurdy (drums); Martin Banks (trumpet); Rashid Jamal Ali (tenor saxophone). I Want a Little Girl; Somebody's Got to Go; Blues in the Closet; No Good for Me; Stormy Monday; Straight—No Chaser; Worried Mind Blues. PABLO • D2310866 • $9.98. © K10-866 $9.98.
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