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# High Fidelity

**VOLUME 34  NUMBER 3  MARCH 1984**

## AUDIO

**CrossTalk by Robert Long**
Magnetized cassette deck: The cost of going CD: Scanning woes .......................... 9

**Currents: A preview of the Winter Consumer Electronics Show**
10

**Basically Speaking by Michael Riggs**
How HF tests cassette decks: Part 1 .......................... 12

**New Equipment Reports**
- Technics SL-P7 Compact Disc player ............................................... 13
- Arcam C-200 preamplifier .................................................. 14
- Signet TK-10ML phono cartridge ........................................ 16

**Car Stereo Special**
**Speaker Shopping Tips by Peter Dobbin**
Research shows how placement affects performance .......................... 31

**Lab and Road Tests**
- Panasonic Supreme Elite CQ-S958EU receiver/tape deck .......................... 34
- Yamaha YCT-800 tuner/tape deck ........................................ 37
- Sanyo FT-V98 receiver/tape deck ........................................ 39

## NEW TECHNOLOGIES

**Video System Components by Frank Lovece**
More than 50 monitors, tuners, and monitor/receivers compared ............. 43

**Exclusive Compact Disc Reports**
- Do CDs Sound Better? by Sam Sutherland ........................................ 47
  A behind-the-scenes look at why some CDs sound worse than their analog counterparts
- LP vs. CD: Little Things Matter by E. Brad Meyer .................................. 48
  Experiments reveal the importance of equalization
- The Carver CD Fixer by Michael Riggs ........................................ 50
  First look at a "black box" designed to tame surly CDs

**Video Lab Test: RCA VJM-2023S monitor/receiver** .......................... 53

**Videodisc Reviews: "Girl Groups"; The Weavers in concert** ............... 57

**Compact Disc Reviews: Miles Davis; Joe Jackson; Pretenders; Luciano Pavarotti** 58

## CLASSICAL MUSIC

**Discovering American Music by Paul Kresh**
One seasoned listener's personal odyssey ........................................ 61

**A 100-Disc Library of American Recorded Music**
Reviews: Esswood sings Purcell; Amsterdam Nonet plays Berwald; Paris Opera's Carmen ............. 68

**Critics' Choice**
Conductors on 78s, restored; Instrumental artistry from Mayr's Jew's harp to Meyer's clarinet 75

## BACKBEAT/Popular Music

**The New Jaco by Samuel Graham**
Onetime Weather Report bassist Pastorius breaks out on his own .............. 76

**Pop Reviews: Joan Armatrading; Carole King; Andy M. Stewart; James Blood Ulmer** ............. 78

**Top 10 of '83 from the Big 6**
Our pop and jazz critics pick the year's best albums ...................... 79

**Jazz Reviews: Anthony Davis; Michael Hashim and Jimmy Rowles; Mark Isham** ............. 80

## DEPARTMENTS

**About This Issue** .......................... 2

**Letters** .......................... 7

**Reader-Action Page** .......................... 86

**Advertising Index** .......................... 86

**Cover Story**
Elegantly simple.

In 1971 this man introduced the first planar magnetic loudspeaker to American audiophiles. Now, with four models priced from $475 per pair and up, Magneplanars* are still the ONLY full-range planar magnetic speakers on the market. With over 50,000 pairs sold, Magneplanars are recognized worldwide as an elegantly simple, cost-effective approach to accurate music reproduction. Although there have been speakers that do some things better, never has there been any that do more things right—especially for the price.

And now, Jim Winey, in recognizing the performance advantage of true ribbon tweeters for esoteric audio, has developed a superior true ribbon tweeter that interfaces synergistically with Magneplanars. As with Magneplanars, this patented* ribbon tweeter is an elegantly simple device. However, this simplicity is deceiving, for it accomplishes all of the following:

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About This Issue

Inside the Pages of March’s High Fidelity

As this issue goes to press, I’ve just returned from the Winter Consumer Electronics Show—the trade-only exposition where manufacturers introduce the latest in home electronics gear to their dealers. Next month, we’ll present full coverage of the show (a preview appears in this edition on pages 10 and 11), but one aspect is worthy of note here: the continued focus on the Compact Disc. New players were everywhere, several manufacturers displayed prototype machines for cars, and record companies promised a broad array of new releases for later this year.

But underlying the mainstream of euphoria was a current of disenchantment with how some Compact Discs sound. Since the first releases were reviewed (see our January 1983 issue), music critics have alternately lauded and damned CD sound; today, a consensus has formed that though the hardware may be close to perfect, the software is sometimes deficient.

Several months ago, HIGH FIDELITY began its own investigation of what is behind the dissatisfaction with CD sound. First, pop music critic Sam Sutherland interviewed engineers and producers on what steps are taken in transferring the original recording to the CD format. He found that because most pop CDs are derived from analog master tapes, many imperfections can—and do—creep in between the original tape and the final product.

Concurrent with Sutherland’s research, regular contributor E. Brad Meyer conducted experiments to discover why the same recording may sound different in the CD and LP formats. And, almost as an example of “zeitgeist,” Bob Carver (of Carver Corporation) visited our offices recently while we were reviewing Sutherland’s and Meyer’s reports. As we discussed with him our Compact Disc investigation, he disclosed that he had been working on a “black box” to give CDs a more LP-like balance and ambience. (Carver eventually unveiled the device at the CES.) These three exclusive reports, which appear under the heading “Do CDs Sound Better?”, provide much food for thought—and at least suggest that the tarnished silver lining of CD sound could use a little polish.

Also very visible at the Consumer Electronics Show was the new generation of separate television components. There’s little question that the familiar all-in-one TV set is rapidly being supplanted by high-performance separate monitors and tuners and combined monitor/receivers. This issue includes special foldout charts listing more than 50 of these components and their important features.

A quick look at our music coverage for this month: What were the top pop and jazz recordings for 1983? By the time you read this you’ll already know the “official” results—the Grammy Awards. Those notwithstanding, we asked our critics to list their Top 10. Of course, they didn’t agree—so we’re printing the individual choices. Does your list match any of theirs? See page 79. On the classical side, Paul Kresh explores the roots of so-called “American” music and provides an extensive discography of more than 125 recordings.

And remember: Next month’s issue will contain a special report on new products introduced at the Winter CES.—W.T.
Acoustic Research introduces three essentials for the ultimate system.

1. Our new line of nine different computer-designed speakers, ranging from the economical, space-saving AR8b bookshelf model to the awesome AR9ts with its Dual Dome™ mid-high range driver and thunderous Bass Contour Chamber.

2. A new three-point suspension turntable whose predecessor was a legend among audiophiles ten years ago. So much of a legend we decided to bring it back in a totally updated version—re-designed from the dustcover on down. With your choice of universal tone arm mounting platform, or AR's own new medium mass straight arm.

3. Our new AR compact remote control unit employing ultra-sophisticated microcircuitry. From wherever you sit or stand, you can control stereo balance and work a wide range of functions on your amp for maximum convenience and ideal sonic performance.

Hear what you’ve been missing.
The leader in equalizers still stacks up best
with improved specs, more features and a new look.

ADC's new line of Sound Shapers® proves that the best just got better. Again. Our stereo frequency equalizers incorporate the superb electronics, reliability, and high performance technology that have made ADC famous. Plus we've improved them with new refinements that offer you more control and a new design that makes them look as good as they function.

Our top-of-the-line SS-315 offers a unity gain of ± 1 dB and the best signal-to-noise ratio in the industry. For the most in-versatility, the range of each frequency control is an extra wide ± 15 dB, far more than the 12 dB of lesser equalizers. Tape monitoring and two-way dubbing capabilities for two decks are available. LED indicators for each control let you see the selected frequency curve at a glance. The SS-315 includes a built-in real-time spectrum analyzer, pink noise generator and calibrated electret microphone enabling you to attain flat response in minutes. Other features include external power - robbing subsonic frequencies.

You du to attain flat response in minutes. Other features include external noise reduction and sound processor loops to accommodate time delay, subharmonic synthesizer, dynamic range expander or reverb units. There's also a subsonic filter that gets rid of damaging, power-robbing subsonic frequencies.

The other models in our Sound Shaper line offer the same fine ADC quality, with similar features geared to your equalization and budget needs.

If you've been waiting for the right stereo frequency equalizer for your system, don't wait any longer. With ADC Sound Shapers, the odds are stacked in your favor. (And if you're into video, be sure to see and hear what our new ADC Video Sound Shapers can do to improve your video performance.)

**Sound Shaper®**

**Frequency Equalizers**

Shaping sound is as easy as ADC.
They don't just reduce tape noise.
They eliminate it.
Technics cassette decks with Dolby® B, C and dbx.

This remarkable series of Technics cassette decks represents an important technological advance in the fight against tape noise. Because unlike other decks that give you only one or the other, Technics now gives you: Dolby B noise reduction for compatibility with your present tape collection. Dolby C for compatibility with the new "C" encoded tapes. And dbx to eliminate virtually every decibel of audible tape noise. All in one deck.

dbx is effective because it compresses a musical signal so its dynamic range is cut in half. When the tape is played back, the original dynamic range is restored, but the noise level is pushed below the level of audibility.
This allows loud passages to be recorded without distortion and soft ones without hiss.

These Technics cassette decks go on to give you computerized performance: microprocessor feather-touch controls. Music Select to automatically find any song on the tape. Music Repeat to replay a song up to 16 times. And a remaining time display to tell you how much recording is left on a tape.

In addition, there is automatic tape bias and EQ setting, expanded range (-40db to +18db) three-color FL meters to handle all the dynamic range dbx gives you, the accuracy and precision of two-motor drive and more.

Explore all of the Technics cassette decks with Dolby B, C and dbx. After all, why own a deck that just reduces tape noise, when you can own one that also eliminates it. Technics.

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want to hear and totally relax to what you do want
to hear. And unlike speakers, Koss stereophones
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Koss.” With the Koss PRO/4X’s remarkable frequency
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dreamed it could.

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Letters

All Digital Is the Best Digital

Last fall I bought a Compact Disc player and have since accumulated more than 30 CDs. About five of these are fully digital, with the rest being made from analog master tapes. I can honestly say that the discs made from analog masters almost always sound infinitely worse than those made from digital tapes. Analog recordings of Asia Men at Work, The Police, Danze Warwick, and other pop artists sound compressed, even in the CD format.

On the other hand, I have a copy of an Elton John disc made from an analog recording re-mixed specifically for Compact Disc, and it sounds extremely good—better even than some of the fully digital CDs. Does this mean that the CD format is true that the results depend totally on the studio's recording and mixing techniques? It certainly seems to reveal all of their mistakes. Perhaps the best recordings for this new medium would be of live sessions with no overdubbing.

Jeff Vinkemulder
Ramstein A.B., West Germany

See our special report on the sound of current Compact Discs, beginning on page 47.—Ed.

"Electronify" vs. "Amplify"

I appreciated Will Crutchfield's review of George Crumb's Apparition [December, 1983]. As associate engineer responsible for amplifying the piano on the piece, I was rather tickled that he misinterpreted how the amplification was used. Contrary to Crutchfield's assumption, Crumb's score calls for all of the sounds from the piano—both those produced by the keyboard and those produced inside the piano—to be amplified. The microphones we used were two Crown PZM-39s, whose limited bass response was reinforced in some sections by an Audio-Technica AT-813. The signals were individually equalized and mixed into mono, and the result was sent through a Yamaha power amp into a Urei 811 studio-monitor speaker, mounted on a stand about six feet behind pianist Gilbert Kalish.

There was no attempt to "electronify" the piano. Rather, our goals were to improve the balance between the inside-the-piano playing and Jan DeGaetani's voice and to make the piano in general seem "bigger" without altering its basic sound. Since Crutchfield could not hear the latter I consider our job well done.

Paul D. Lehman
Cambridge, Mass.

Information, Please

I would like to join the Boston Audio Society, but I have not been able to find its address. Can you please forward it to me?

William J. Dowling
Chestnut Hill, Mass.

Despite its name, the Boston Audio Society (or BAS) is an international organization with members all across the United States. The reason is its interesting and informative newsletter, The BAS Speaker, which supplements the monthly meetings enjoyed by local members. For membership information, write the Boston Audio Society, P.O. Box 7, Kenmore Square Station, Boston, Mass. 02215-0007.—Ed.

In your December 1983 issue, Alexander Retsoff mentions record-cleaning equipment from several companies whose addresses I cannot find, including Keith Monks, VPI, and Allsop. Could you please tell me how to contact them?

Harold Robinson
San Francisco, Calif.

Allsop's address is P.O. Box 23, Beverly Hills, Calif. 90227. VPI's is P.O. Box 158, Ozone Park, N.Y. 11417. We do not have a current address for Keith Monks Audio.—Ed.

Of Pearls and Oysters

We live in a rural area; our nearest source of records is 20 miles away, in Santa Rosa, where there are three chain outlets: Record Factory, Wherehouse, and Rainbow Records. All carry a large stock of Top-40 discs and a smattering of classical ones; none will special-order anything. There are a few smaller places, one of which carries a pretty good stock of jazz and classical and will special-order albums.

In the November '83 issue of HIGH FIDELITY, John S. Wilson reviewed the Jimmy Giuffre album "Drumflly." Since he had undoubtedly received his review copy three to four months before the magazine reached me, and since KJAZ-FM had been playing "Drumflly" for at least three months, one would expect the album to have been on the market by mid-November. But it wasn't. It isn't even listed in the current Phonolog. It appears that only reviewers and disc jockeys can get records these days. What is someone like me to do? Why would a record company promote a disc that isn't available?

I have been following Mr. Wilson's reviews for years and seldom has he ever led me astray. I would appreciate any comment or suggestions he might have.

C. R. Sager
Guerneville, Calif.

John S. Wilson replies: The only solution I can see is to purchase records by mail, which is how many small jazz labels function since they cannot compete with Top-40 product for distribution and in-store space. I usually include addresses with my reviews, and I think any newspaper or magazine that publishes reviews of small-label jazz should follow suit.

Jimmy Giuffre's "Drumflly" is on Sad Note, which is distributed by Polygram Special Imports. According to the distributor, the disc should be available from Tower Records in San Francisco. If not, write to Daybreak Express, P.O. Box 250, Van Buren Station, Brooklyn, N.Y. 11215. Daybreak handles mail order for PSI. Incidentally, "Drumflly" is listed in the current Schwann catalog.—Ed.

Letters should be addressed to The Editor, High Fidelity, 825 7th Ave., New York, N.Y. 10019. All letters are subject to editing for brevity.
Maxell introduces the new XL-S audio cassettes; a series of ferric oxide tapes which deliver a level of performance that can capture the sound nuances found on Compact Discs more faithfully than other ferric oxide cassettes on the market. There are a number of areas where this achievement is apparent.

**GREATER DYNAMIC RANGE.**

Through a new formulation of our magnetic particles, we were able to reduce the perceived residual AC bias noise level by 1 dB in the critical 2 kHz to 10 kHz mid-frequency range. And simultaneously increase sensitivity and maximum output levels by as much as 2 dB. As a result, the dynamic range of each tape has been significantly expanded. So you get a better signal to noise ratio and a fuller impact of the dynamic transients exclusively inherent to digital CD recordings.

**LOWER DISTORTION.**

The newly formulated particles also contribute considerably to XL-S's low output fluctuation, as well as its virtual distortion-free reproduction, especially in the critical mid-range frequencies. This, in turn, accounts for our XL-S tape's enhanced sound clarity.

**IMPROVED MAGNETIC PARTICLES.**

Our refined particle crystallization process is the basis for all of these accomplishments. Maxell engineers are now able to produce a more compact needle-shaped Epitaxial magnetic particle of extremely high uniformity. This allows us to create a greater ratio of total surface area to unit weight of magnetic particles.

As a result, our XL-S tapes now have the ability to record more information per unit area than ever before.

---

**Packaging Density of Uniform Particles**

Which is why Maxell high bias XLII-S and normal bias XL-I-S are unsurpassed at reproducing the sound qualities found on today's finest recordings. Regardless of whether your frame of reference is analog or digital audio discs.

For technical specifications on the XL-S series, write to: Audiophile File, Maxell Corp. of America, 60 Oxford Drive, Moonachie, New Jersey 07074.
How Much Power?

When I went to buy speakers for my receiver—a Sony STR-VX550, rated at 50 watts per channel—I saw the Sony SSU-400s. On the back they said "60 watts, max. power." So I thought they would be a good match. But their instruction manual recommends a 30-watt receiver. And on the box it says "3-way," but they have no midrange drivers. I'm so confused that I'm scared to use the speakers. Please advise.—Abid Hussain, New Orleans, La.

I don't know what to make of your statement about the three-way speaker system having no midrange driver (the SSU-400 does have three drivers), but you needn't worry about the power ratings. Sony doubtless means that the speakers need no more than 30 watts to be driven adequately, but will work well even with 60 watts. In any event, the difference between these figures is not great enough to be of concern. Most such power ratings are almost meaningless, anyway. The speakers will work—though less well—with smaller amplifiers and are unlikely to be damaged in normal use by more powerful ones.

Magnetic Storm

I have read that you should never turn on the power when a tape deck is in the recording mode, because it will magnetize not only the heads, but the rest of the machine as well. That's just what my little girl inadvertently did, however. I've also read that the subject of magnetization has been overplayed. I used a TDK demagnetizer on my deck and have noticed no problem whatsoever in playing or recording cassettes, but I'm still wondering whether I will have to replace a machine I like (a Sony FX-30) or risk degrading my tapes.—Porter C. Holman, New York, N.Y.

It may be possible to cause gross magnetization this way on some decks, but certainly not on all. In fact, most decks can't be turned on in the recording mode in the first place. And cassette decks in general seem less plagued by residual magnetization than open-reel decks.

I think a repair shop should be able to measure residual magnetism, but readers keep telling us that their shops don't have the necessary meter. In that case, you'll have to rely on your ears—which should detect a dulling of the highs and increased hiss on repeated playings of any cassette if the metal parts over which the tape must pass have become magnetized. You may want to make up two identical tapes with music and blanks designed to test for this. Play one of them at least 20 times (though in severe cases, one pass is enough to produce audible degradation), then play the other tape for comparison. If they still sound identical, forget the whole thing.

At Home with CDs?

Should I plan to buy a Compact Disc player (and everything that goes with it) and start collecting CDs, or can I use the money as down payment on a house, as I've always planned? In other words, are CDs going to replace my conventional albums and stereo, or what?—Tammie Ward, New York, N.Y.

If you have to give up your home to buy a Compact Disc system, the price is too high. But even if you're half serious, you seem to overestimate the cost of going CD. (Prices for basic players have dropped into the $500 range, and you can use them with your present system.) I do think CDs will replace LPs eventually, but I also think that most new recordings will be available in both formats for some years.

Equalizer Magic

My Pioneer receiver pushes 65 watts through Jensen 12-inch, three-way loudspeakers. For the money I spent, the matchup can be simply ear-punishing without losing a thing. An ADC SS-110 equalizer also enhances the setup. A friend has an 85-watt Realistic receiver with 15-inch, three-way loudspeakers, and he just can't match the sound. Can the equalizer make up a 20-watt difference, or is it just the equalizer's performance and clarity that make it sound like more?—Gene Wolain, Williamsport, Ind.

Forget the "20-watt" difference: In this case, it amounts to only about 1 dB, which is barely perceptible. And you're presumably basing these figures on rated power; actual power short of clipping may be quite different. For example, the Pioneer receiver could conceivably have several dB of dynamic headroom and the Realistic little or none, which would give your setup a power advantage when playing music. Another possibility is that your speakers are more sensitive than your friend's or that they have a more appealing balance and lower distortion.

An amplifier's capabilities are as they are no matter what kind of signal is fed to its input. Thus, an equalizer can in no way increase the power of the amplifier—only, at best, the subjective perception of loudness, depending on the sort of equalization applied—and its ability to clean up reproduction that's less than perfectly transparent is similarly limited. Equalizers are very useful devices, but they have no magical powers.

A Scan That Can't?

My Akai GX-F44R cassette recorder has an "introgan" feature designed to play the first ten seconds of each song on the tape. It doesn't work well on the tapes I recorded on the deck, though it does work with tapes at a reputable shop where I took the recorder for repair. The technician says there is no way of adjusting the feature. Any suggestions?—Ramon A. Garcia, Omaha, Neb.

You don't say in what way the feature fails to work well with your tapes, but several possibilities come to mind. With any such feature, you need at least four seconds of real silence so the device can "hear" the intersong blanks during fast-wind, and you need music without big "holes" in it—which, to the deck, would seem to be just other blanks. Classics and speech often have such holes, and there really isn't anything you can do except to keep the signal level as high as possible without overloading the tape when you record it.

Conversely, if you make your tapes from any signal source having a high background noise level that continues between songs—such as weak FM stations or scratched discs—the feature will take the noise for signal and go right by your unquiet blank. Once the recording is made, your only remedy is to erase the noise between the songs, which is hard to do without erasing any of the music. So the main point is to keep the signal level up and the noise level down on all tapes you make.

We regret that the volume of reader mail is too great for us to answer all questions individually.
CES Preview: What’s in Store for ’84

Though full coverage of the audio and video gear introduced at the Winter Consumer Electronics Show in Las Vegas will appear in these pages next month, we know how eager you are to get the first word on new developments. This preview is a foretaste of what’s to come, based on information gathered at a hectic round of preshow press briefings in New York. The equipment described here should be available this summer.

Sometimes, however, products or technologies announced at (or before) a CES don’t make it to retail shelves quite on schedule. Such is the case with VHS Hi-Fi. At last June’s summer show, JVC outlined how it was tackling the problem of recording a frequency-modulated (FM) soundtrack on a videocassette (see “Tech Fronts,” September 1983). But Panasonic disagreed with JVC’s choice for a noise reduction system, and the two electronics giants retired to the conference table to talk things out. Though JVC and Panasonic have yet to announce their own marketing plans, it is rumored that Hitachi will introduce a VHS Hi-Fi recorder in April based on the “standards” developed by all three companies.

**Portable Video First**

The Winter CES has been the traditional venue for the introduction of new video equipment, and this year Kodak’s booth will no doubt draw huge crowds eager to see the world’s first 8mm portable video system, built to the standards agreed upon last year by the international 8mm Video Standardization Conference ("Tech Fronts," July 1983). At a special preshow press briefing, Kodak demonstrated the Kodavision 2000 system, which consists of a one-piece camera/recorder, or camcorder; a stay-at-home cradle in which the camcorder is placed for home viewing and battery charging; and a tuner/timer module that snaps into the cradle for off-the-air recording. Kodak is also offering two grades of blank 8mm cassettes for the system: a standard-grade metal-particle formulation and a high-grade metal-evaporated tape. At first, both formulations will be available only in 90-minute lengths.

The camcorder section of the system comes in two versions. The Models 2400 and 2200 each have a black-and-white CRT viewfinder, a 1/2-inch Newvicon pickup tube with a sensitivity of 20 lux, and a 6:1 power zoom lens with automatic iris. The more expensive Model 2400 also has automatic focus and three video heads for improved special effects.

Prices for the various elements of the system are $1,900 and $1,600 for the 2400 and 2200 camcorders, respectively; $200 for the Model 2020 camcorder cradle; and $300 for the Model 2022 tuner/timer module. Prices for the cassettes will be announced closer to the market introduction date for the system, which is in late summer.

**Laser Tracking**

NAD claims that its Model 5200 Compact Disc player is superior to more costly designs in its ability to track dirty or flawed discs. The improved performance is said to derive from a frame-synchronizing circuit that eliminates data losses caused by timing jitter, and a new logic processing circuit that analyzes bit-error patterns, thereby doubling the system’s capacity for error correction both before and after signal de-interleaving. The nonprogrammable NAD 5200, priced "in the mid-$600 range," will have some tough competition from manufacturers competing more on price and features than on higher performance. Sanyo, for instance, is offering the CP-200 with 16-selection programmability for $550, and rumor has it that General Electric will soon introduce a player that some industry observers believe could be sold for as little as $350.

**Audio, Video Tapes**

Though made with pure metal particles, TDK’s new HX audio cassette tape is not a Type 4 formulation: Its lower bias requirement suits it for use with your deck’s Type 2 (chrome or chrome-equivalent) setting. The HX formulation (not to be confused with the Dolby HX Pro headroom-extension circuit) is said to offer about 1 1/2 dB more dynamic range than “standard” Type 2 tapes.

TDK also has two new videotape formulations: Extra High Grade Hi-Fi and High Definition Professional. Because of
its extremely low dropout rate, the Extra High Grade formulation is said to be particularly appropriate for use in Beta Hi-Fi and VHS Hi-Fi recorders. In addition, TDK claims that this formulation has 3 dB better luminance and 5 dB better chrominance signal-to-noise ratios than the company’s standard-grade videotape. High Definition Professional, or HD Pro, is TDK’s new top-of-the-line formulation. It uses an ultra-small magnetic particle for a packing density three times greater than the density of the Extra High Grade tape. According to the company, luminance and chrominance signal-to-noise ratios are 2 dB and 1 dB better, respectively, than those for Extra High Grade. As of press time, no prices for any of these tapes had been announced.

- Three Decks from TEAC

TEAC will market three new high-performance cassette decks this spring, ranging in price from $725 for the V-900X to $475 for the V-700X. The V-900X is a three-head, two-motor design equipped with a tape-tuning system to automatically adjust sensitivity, bias, and equalization. The deck includes all three popular noise-reduction systems—DBX, Dolby B, and Dolby C.

- CD for the Road

Philips, inventor and codeveloper with Sony of the Compact Disc system, is demonstrating a prototype car CD player at the Winter CES. Philips states that more work remains to be done in improving motion stability and disc-loading mechanics. Meanwhile, it’s interesting to see how the company envisions a car CD player’s controls. Note that aside from the “open/close” button—which presumably causes a disc holder to emerge horizontally from behind the track/program selector display—all the buttons are labeled exactly the same as the transport controls on a cassette player.

- Jensen’s New Look

Jensen, in a bold departure from the look and feel of most car radio/cassette players, is introducing the five-model ATZ series of computer-controlled front ends. As you can see in the photos of the top-of-the-line ATZ-500, instead of rotary knobs flanking the central control panel, there are control-bearing “wings” (volume and tuning controls on the left and station presets on the right) that fold out to cover the space usually occupied by a front end’s control shafts. The LCD time/frequency/mode display screen folds down to reveal less frequently used controls. The five models differ in features and power output. (The ATZ-500’s four-channel amplifier section is said to put out a total of 40 watts.) Prices range from $520 to $320.

- Facets of the Diamond

Wharfedale, the English speaker maker, has a compact system just 10 inches high and 7 1/2 inches deep designed especially for wall mounting. The Diamond uses a 4 1/2-inch bass/midrange driver and a 3/4-inch plastic dome tweeter in a computer-optimized bass-reflex enclosure. Sensitivity (“efficiency”) is said to be 86 dB for a 1-watt (0-dBW) input. Price has not yet been announced.

"I would rank it... among the best phono cartridges now available, and... suited for use in the finest of systems."
-NORMAN EISENBERG
Ovation Magazine

audio-technica®
How HF Tests Cassette Decks: Part I

FREQUENCY RESPONSE is one of the most important, and most basic, indexes of fidelity. But for a cassette deck, it's a pretty complicated matter. The reason is that a deck's response is bound up with the characteristics of the tape: Neither has a frequency response independent of the other, which is why we always specify the tapes we use for testing.

Playback response is measured with a standard BASF test tape prerecorded with tones at spot frequencies from 3.15 Hz to 18 kHz. For flat response, a deck must have a high-quality playback head whose azimuth alignment to the tape is the same as that of the head that was employed to record the tones, and its playback equalization must conform to the standard of the International Electrotechnical Commission (IEC).

Unfortunately, azimuth is a problematic issue. Heads are aligned using calibration tapes (such as the BASF), which are assumed to have been recorded with the correct azimuth (i.e., with the head gap exactly perpendicular to the direction of tape travel). But these tapes turn out not to be identical. Thus, a deck adjusted to one calibration tape will probably seem misaligned when tested with a different one. The result will be an apparent high-frequency rolloff, its severity depending on the magnitude of the azimuth disagreement.

As a practical matter, the problem this creates is one of compatibility. A commercially recorded cassette or a tape made on another machine may not be accurately reproduced. But a well-designed and otherwise properly adjusted deck should do a fine job of playing back its own recordings, because the azimuth of its recording head will be aligned to that of its playback head.

Low frequencies also present a problem, albeit a very minor one. Most playback heads exhibit low-frequency response irregularities known as "head bumps." (Phenologists, take note.) But because the tones on the test tape are at discrete frequencies with spaces between them, these are not fully reflected in the playback response measurement. Although we do render the curves all the way down to the tape's lower limit, they should be interpreted as showing the overall lie of the bass response rather than its exact shape. This is why the tabulated response below the graph cuts off at 315 Hz.

The record/play curves—which show the frequency response for tapes recorded and played back on the machine under review—are run with swept sine waves, so they do accurately reflect the low-frequency response. The important thing to remember about these curves is that they represent the frequency response with the specific tape formulations used for the testing. Substituting a different tape without readjusting the deck's bias, recording equalization, and sensitivity usually will give different results. We therefore test each deck with the three tape formulations (a Type 1 ferric, a Type 2 chrome or ferricobalt, and a Type 4 metal) for which the manufacturer says it has been set up. And if the deck has any automatic or user-accessible manual adjustments for bias, equalization, or sensitivity, we use them to trim it up before making any measurements or doing any listening.

Bias and equalization affect the basic frequency response, shown on the graphs by the solid curves. Most noise reduction systems, such as Dolby B and C, tend to exaggerate any response errors. (Response with noise reduction is indicated by broken-line curves.) DBX is the principal exception to this rule. Although it will double response errors in measurements made with swept sine waves, it ordinarily will not have this effect on music signals. Instead, it will cause a slight, normally inaudible modulation of the music's dynamics.

Sensitivity adjustment affects Dolby tracking only. If it is not correct, the error will manifest itself in the Dolby response as anomalies that do not follow the shape of the curve made without noise reduction. The severity of such mistracking is level-dependent, and our curves show just about the worst case. A well-adjusted deck will exhibit Dolby mistracking of no more than 1 or 2 dB.

A frequently asked question is why we measure record/play response at -20 dB (relative to DIN 0 dB) when everyone, including us, recommends setting peak recording levels 20 to 25 dB higher. Why don't we run curves at DIN 0 dB? In fact, Diversified Science Laboratories does check response at 0 and -10 dB, to give us an idea of the test deck's high-frequency headroom. We comment if it is unusually good or bad, but we don't print the curves because they don't represent the deck's frequency response when recording music, even with the meters peaking at 0 dB or higher.

The graph above shows why. The shaded area represents the approximate average spectral energy distribution of orchestral music; the curve above it indicates the maximum recording level (for 3 percent distortion) of a good Type I tape in a typical high-quality cassette deck. If the deck's meters are allowed to peak a few dB above DIN 0 dB, the music's maximum midrange energy will hit just about at the tape's overload point in that frequency range (as shown). Because the musical energy falls off faster at lower and higher frequencies than does the tape-saturation level, the tape can handle the entire signal with low distortion and flat frequency response.

But it would be a different story if the spectral distribution were flat, with the same amount of energy at all frequencies. The signal would far exceed the tape's capacity: the bass and treble, causing gross distortion and a severe high-frequency rolloff. It is this unnatural condition that is simulated by a frequency response measurement at DIN 0 dB. A -20 dB level is just low enough to guarantee that the response will not be limited by tape saturation, which would disguise the deck's actual capability under typical recording conditions.
Technics Builds a Basic CD Player


All data obtained using the Sony YEDS-7, Technics SH-CDD01, Philips 410 055-2, and Philips 410 056-2 test discs.

FREQUENCY RESPONSE

<table>
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</tbody>
</table>

DE-EMPHASIS ERROR

-0 dB, 1 to 16 kHz

CHANNEL SEPARATION (at 1 kHz) 924 kHz

S/N RATIO (re 0 dB, A-weighted)

without de-emphasis 94.1 dB

with de-emphasis 103.1 dB

HARMONIC DISTORTION (THD+N: 40 Hz to 20 kHz)

at 0 dB ≤ 0.013%
at -24 dB ≤ 0.051%

IM DISTORTION (70-Hz difference frequency: 300 Hz to 20 kHz)

0 to -10 dB < 0.01%

LINEARITY (at 1 kHz)

0 to -60 dB no measurable error

at -70 dB ± 0.5 dB

at -80 dB ± 1.5 dB

at -90 dB ± 4.5 dB

VALUE HAS ALWAYS BEEN one of Technics's strong suits, so it comes as no surprise that the company is among the first to market a Compact Disc player in the relatively moderate $700 price bracket. This has been achieved not by skimping on quality, but by taking advantage of new large-scale integrated circuits (LSIs) and by trimming away nonessential features, such as remote control, elaborate programmability, and a headphone jack. The omissions are minor, especially when you consider the comparatively primitive features of typical analog turntables, and they in no way impair the SL-P7's basic operation.

In fact, its complement of cueing options is very strong. Besides PLAY and PAUSE (which doubles as the stop key), there are two pairs of keys labeled "search" and "search/index." Pressing SKIP during play causes the laser pickup to track at a time in the direction indicated on the key. A single tap sends the laser to the beginning of the current or next band; a sustained press propels it rapidly across the disc until the desired track number appears on the display and you release the key. Or you can use SKIP to select the track at which playback will commence when PLAY is pressed.

As its name implies, SEARCH/INDEX is a dual-function control. In the stop mode, it can be used to specify the index number within a track at which play will begin. (The track number is set first with SKIP.) During this procedure, the display shows the track and index numbers; when PLAY is pressed, the index number is replaced by elapsed time from the beginning of the track.

In PAUSE or PLAY, pressing SEARCH/INDEX moves the pickup quickly across the CD in the direction indicated on the control key until you release it. The scan speed depends on how long you hold the key down, increasing substantially after a few seconds of continuous pressure. We were happy to find that the SL-P7's track and time readouts keep pace with the pickup, and that when SEARCH is activated from the play mode, you can still hear the output from the disc, albeit speeded up and at a reduced level. (Some players leave you "flying blind" during high-speed searches.)

Other features include the ability to repeat a disc or a track automatically and provisions for timer-activated playback (in conjunction with an external timer). There are also a couple of special jacks on the back panel. The one labeled "Synchro Rec" is a mini jack for synchronized recording with certain Technics cassette decks and for what the company calls "direct operation" with appropriately equipped Technics amplifiers. The latter causes the amplifier to switch its input selector to the CD position when PLAY is pressed, or the SL-P7 to go into PLAY when...
A Modular Preamplifier From England


The idea of modular construction has traditionally appealed more to British equipment designers than to those in other countries. Its primary virtue (which must override somewhat higher manufacturing costs) is the versatility of the resulting product: The user can tailor the component to his needs and update it more easily than is possible with conventional equipment.

"Arcam" is the brand designation for the products of A&R, otherwise known as Amplification & Recording, Ltd., of Cambridge, England, which uses the modular approach effectively in its C-200 preamplifier. The individual modules are designed for specific types of inputs (line—or aux—fixed-coil phono, or moving-coil phono). The phono modules can be further customized, at so-called DIP switches accessible on the bottom panel, for the pickups you choose. The moving-coil (MC) module is fixed-coil phono, or moving-coil phono). The phono modules can be further customized, at so-called DIP switches accessible on the bottom panel, for the pickups you choose. The moving-coil (MC) module is fixed-coil phono, or moving-coil phono). The phono modules can be further customized, at so-called DIP switches accessible on the bottom panel, for the pickups you choose. The moving-coil (MC) module is
OUTPUT AT CLIPPING (1 kHz)
main output 8.6 volts
headphone output 2.1 volts

HARMONIC DISTORTION (THD; 20 Hz to 20 kHz)
headphone output <0.01%

FREQUENCY RESPONSE
headphone output 65½ dB
main output 360 ohms
tape output ≤ 2,000 ohms
headphone output 155 ohms

SENSITIVITY & NOISE (re 0.5 volt; A-weighting)
fixed-coil phono 16½ mV
moving-coil phono 285 mV
hi. sens. 340, 110, 32, or 11 ohms

INPUT IMPEDANCE
aux input fixed-coil phono 166 kohms
fixed-coil phone 50, 95 kohms, 85, 165, or 300 pF

OUTPUT IMPEDANCE
main output 360 ohms
tape output ≤ 2,000 ohms
headphone output 155 ohms

CHANNEL SEPARATION (at 1 kHz)
65½ dB

INFRASONIC FILTER
-3 dB at 26 Hz -12 dB octave

SELECTOR
PHONO/AUX/TUNER

TAPE COPY (1 • 2/2 • 1)
TAPE MONITOR (1 SOURCE/2)
VOLUME ADJUST
BALANCE ADJUST
BASS ADJUST

HEADPHONES

AC POWER
HEADPHONES

MODE (STEREO/MONO)
TONE CANCEL
TREBLE ADJUST

CHANGE THE SENSITIVITY TO 60 MICROVOLTS, THE RESISTANCE TO 100, 30, OR 10 OHMS, AND THE CAPACITANCE TO 100 NANO_FARADS. THE FIXED-COIL (MM) INPUT MODULE IS RATED AT 3 MILLIVOLTS (mV), 47,000 (47k) ohms, AND 50 PICOFARADS (pF); THE ALTERNATIVES ARE 1.5 MILLIVOLTS, 30,000 OR 8,000 OHMS. AND 150, 270, OR 370 PICOFARADS.

SOME OF THESE OPTIONS MAY LOOK A LITTLE STRANGE AT FIRST GLANCE. THEY PRESUMABLY ALLOW FOR PICKUPS THAT WILL PROFIT FROM SOMEWHAT SPECIAL HANDLING. WHEN DIVERSIFIED SCIENCE LABORATORIES MEASURED THESE INPUTS, THEY FOUND THE RESISTIVE AND CAPACITIVE VALUES OF THE INPUT IMPEDANCES TO BE ONLY SLIGHTLY HIGHER THAN THE RATINGS IN EACH CASE. DSL ALSO TRIED MOVING ALL OF THE MULTIPLE-OPTION DIPOLE-SWITCH ELEMENTS TO THEIR “NON-STANDARD” POSITIONS. FOR THE FIXED-COIL MODULE, THIS YIELDED A MINIMUM RESISTIVE LOADING OF 7,600 OHMS AND MAXIMUM CAPACITANCE OF 400 PICOFARADS. WE REPORT SENSITIVITY ACCORDING TO THE IHF STANDARD; THE ARCAM RATINGS, WHICH ARE EXACTLY 6 DB HIGHER THAN DSL, MEASURED IN EACH INSTANCE, DOUBTLESS DERIVE FROM A DIFFERENT STANDARD.

BECAUSE THE C-200 HAS SPACE FOR ONLY TWO INPUT MODULES PLUS THE STANDARD (NON-OPTIONAL) TUNER INPUT, YOU WOULD HAVE TO GIVE UP THE AUX INPUT TO USE BOTH PHONO MODULES. (ONE OF OUR TEST SAMPL ES WAS DELIVERED IN THIS CONFIGURATION, WHICH MAKES THE FRONT-PANEL SELECTOR DESIGNATIONS INCORRECT AND SUGGESTS THAT ARCAM EXPECTS MOST CUSTOMERS TO CHOOSE A SINGLE TYPE OF PICKUP. ARCAM SAYS THE MODULES ARE USER-REPLACEABLE, SO YOU’RE NOT PERMANENTLY COMMITTED TO ANY INITIAL CONFIGURATION.

ALSO SUPPLIED IN THE BASIC PACKAGE ARE TWO TAPE MONITOR LOOPS, EACH WITH ITS OWN BACK-PANEL INPUT LEVEL ADJUSTMENT, AND TWO PAIRS OF MAIN OUTPUT JACKS. ARCAM OFFERS AN OPTIONAL ELECTRONIC CROSSOVER BOARD THAT PROVIDES A SPLIT FEED TO THE OUTPUT JACKS FOR BIAMPING. ALL INPUTS AND OUTPUTS ARE REGULAR PIN JACKS, THOUGH THE SPECIAL INPUT MODULES (AUX OR PHONO) HAVE FIVE-PIN DIN JACKS AS WELL. (ARCAM NOTES THAT DIN CONNECTIONS ARE AVAILABLE FOR ALL FUNCTIONS, BUT WE WOULDN’T EXPECT MANY USERS IN THE U.S. TO CHOOSE THAT OPTION.)

THE AC INPUT AND OUTPUTS—ALSO ON THE BACK PANEL—REQUIRE SPECIAL CONNECTIONS: YOU CAN’T SIMPLY PLUG THE LINE CORD OF A CASSETTE DECK, FOR EXAMPLE, INTO ONE OF THE ACCESSORY OUTLETS. THE ENTIRE CONNECTION PANEL IS RECESSED ALMOST THREE QUARTERS OF AN INCH INTO THE CASE. IF YOU HAVE SHORT PLUGS AND CAN DRESS THE LEADS DOWNWARD, YOU NEED LEAVE NO CLEARANCE AT THE BACK, THOUGH THIS PROBABLY WON’T PROVE PRACTICAL IN MOST SITUATIONS.

THE FRONT-PANEL HEADPHONE OUTPUT IS POWERED FROM ITS OWN AMPIFICATION STAGE (OMISSION OF WHICH IN SOME PREAMPS LIMITS THE USER TO MODERATE LEVELS, AT BEST, WITH TYPICAL HEADSETS). PLUGGING INTO IT AUTOMATICALLY CUTS OFF THE SIGNAL TO THE LINE OUTPUTS—AND THEREFORE TO THE SPEAKERS—which strikes us as the most practical arrangement for most purposes. ARCAM SAYS THE PHONE JACK’S OUTPUTS ARE OPTIMIZED FOR BOTH HIGH- AND LOW-IMPEDANCE HEADPHONES, BUT THE MEASURED OUTPUT IMPEDANCE SEEMS ON THE HIGH SIDE FOR DRIVING LOW-IMPEDANCE MODULES, WHICH OFTEN ARE RATED AT 8 OHMS.

THE TONE CONTROLS HAVE THE LEAST INFLUENCE ON PERCEIVED SOUND OF ANY WE CAN REMEMBER TESTING. THE BASS HAS VIRTUALLY NO EFFECT ABOVE 300 Hz AND IS BROKE BELOW ABOUT 100 Hz, WITH A MAXIMUM RANGE OF ±5 dB. THE TREBLE IS EVEN GENTLER, HAVING ALMOST NO INFLUENCE BELOW 2 kHz AND BARELY ACHIEVING THE RATED ±5 dB AT 20 kHz. THE FIRST TIME WE TRIED THESE CONTROLS (ON AN FM STATION WITH A GOOD, QUIET TOP END, BUT LITTLE SPARKLE AND NO DEEP BASE IN THE PROGRAM MATERIAL), WE WERE CONVINCED THEY WEREN’T WORKING, SO SUBTLE WAS THEIR AURAL EFFECT. THE FASTIDIOUS MAY FIND THEY PROVIDE THE GENTLE NUDGE THAT CONVENTIONAL CONTROLS SO EASILY TURN INTO OVERSTATEMENT; SOME EXTRAVAGANCE IS BEYOND THEIR RANGE. THE CALIBRATION (OF “SOFT CLICK” STOPS) IS UNUSUALLY ACCURATE, IN 1-dB STEPS AT THE FREQUENCY EXTREMES. THE TONE-CONTROL REGIONS ARE NON-INVERTING, INCIDENTALY, SO SIGNAL PHASE IS NOT REVERSED WHEN YOU PUSH THE TONE-CANCEL SWITCH.

THE INFRASONIC FILTER IS EFFECTIVE. IT BEGINS ATTENUATING RESPONSE AT RELATIVELY HIGH FREQUENCIES. (RESPONSE IS DOWN ABOUT 1 dB AT 45 Hz.) BUT THE ROLLOFF IS VERI TUAL AT FIRST, AND THE FULL 12-dB-PER-OCTAVE SLOPE IS ATTAINED ONLY IN THE INFRASONIC REGION, BELOW 20 Hz. BY THE TIME THE WARB
By means of this nomograph, you can quickly and easily determine the compatibility of any cartridge and tonearm we have tested. Ideally, the arm/cartridge resonance frequency (indicated by the diagonal lines) should fall at 10 Hz, but anywhere between 8 and 12 Hz will assure good warp tracking and accurate bass response. (It is usually okay to let the resonance rise as high as 15 Hz, although we don't normally recommend this.)

Begin by looking up the weight and dynamic compliance shown in the cartridge report and the effective mass listed in the turntable or tonearm report. Add the weight of the cartridge to the effective mass of the tonearm to get the total effective mass. Then find the point on the graph where the vertical line for the total effective mass intersects the horizontal line for the cartridge's dynamic compliance. For a good match, this point should fall in the white region, between the 8- and 12-Hz diagonal lines.

When necessary, you can back-figure compliances and effective masses for cartridges and tonearms tested before we began reporting these figures directly (in January 1983). For cartridges, look up the vertical resonance frequency (measured in the SME 3009 Series II Improved tonearm) and the cartridge's weight. Add 15 grams (the SME's effective mass) to the cartridge weight to get the total effective mass. Then find the intersection of the vertical line representing that mass with the diagonal line representing the measured resonance frequency. Now you can read off the compliance from the horizontal line passing through the point of intersection.

For tonearms, look up the vertical resonance frequency as measured in the test report and the arm's weight. Find the intersection of the vertical line representing the arm's weight with the diagonal line representing its compliance. Reading down the vertical line on which the point of intersection lies will give you the total effective mass of the arm with the Shure V-15 Type III cartridge. Then subtract 6.3 grams (the weight of the V-15 Type III) to get the arm's effective mass. Because of differences in measurement techniques, manufacturers' specifications for compliance and effective mass often differ from our findings and may therefore yield inconsistent results if used with this graph.
YOU WIND UP WISHING IT WERE MORE THAN ONE WEEKEND A MONTH.

You might find yourself in a chopper, cruising the treetops at 90 miles per hour. Or doing something more down to earth, like repairing an electronic circuit. What you won’t find yourself doing is getting bored. Because this isn’t ordinary part-time work. It’s the Army Reserve.

You’ll get valuable skill training. Then one weekend a month, and two weeks each summer, you’ll put that training to good use, while receiving good pay and benefits.

But maybe most importantly, you’ll come away with a feeling deep down that you were challenged and came through. And that doesn’t disappear when Monday rolls around.

See your local Army Reserve recruiter about serving near your home. Or call toll free 1-800-USA-ARMY.

ARMY RESERVE. BE ALL YOU CAN BE.
You, the audiophile, are the toughest critic we know when it comes to sound performance. You're very selective in deciding the perfect equipment for your recording and listening needs.

And you're just as selective in choosing your recording tape. TDK knows that. So we developed a line of high performance audio cassettes that meet your critical requirements.

We call it the TDK Professional Reference Series.

You're probably using TDK SA-X high bias cassettes now because of their superior performance characteristics. In addition, TDK has developed normal bias AD-X which uses TDK's famous Avilyn particle formulation and delivers a wider dynamic range with far less distortion than ever before. Plus, TDK's unique metal bias MA-R cassette which features high-energy performance in a one-of-a-kind unibody die-cast metal frame.

The TDK Professional Reference Series...it'll sound impressive to your ears. So share the pleasure with your friends; they'll appreciate it.

TDK™
THE MACHINE FOR YOUR MACHINE


**New Equipment Reports**

Channel separation

- 27 dB, 100 Hz to 7.5 kHz
- 24½ dB, 100 Hz to 20 kHz

SENSITIVITY (1 kHz)

0.69 mV/sec

CHANNEL BALANCE

-1½ dB

VERTICAL TRACKING ANGLE

21°

MAX. TRACKING LEVEL (re RIAA 0 VU; 1.2 grams)

- lateral >+18 dB
- vertical >+12 dB

DYNAMIC COMPLIANCE (vertical)

-24 x 10⁻⁶ cm/dyne

RECOMMENDED EFFECTIVE TONEARM MASS

- optimum 2.8 grams
- acceptable up to 8.7 grams

WEIGHT

7.7 grams

SQUARE-WAVE RESPONSE (1 kHz)

A Fine Turntable From Onkyo

Onkyo CP-1055F two-speed (33 and 45 rpm) automatic single-play direct-drive turntable.

Dimensions: 17 by 15¼ inches (top); 6 inches high with cover closed; additional 10⅛ inches clearance above and 2½ inches behind required to open cover fully. Price: $300; extra SH-21E headshell, $12; optional RC-5T wired remote control, $50; optional RI-08 wired remote control, $300. Warranty: "limited," two years parts and labor. Manufacturer: Onkyo Corp., Japan; U.S. distributor: Onkyo U.S.A. Corp., 200 Williams Dr., Ramsey, N.J. 07446.

This is the first time we've tested an Onkyo turntable, and after getting to know the CP-1055F, we wonder what took us so long. It is a well-engineered example of a familiar format: an automatic single-play model built around a quartz-locked direct-drive motor and a straight, low-mass tone-arm with a plug-in headshell.

Onkyo calls the design "fully automatic," which is appropriate, though the phrase might cause it to be confused with record changers (which some manufacturers formerly insisted on calling "automatic turntables"). You can cue the arm manually if you want, but the power cueing works so well—with separate buttons for up/down and in/out arm motion—that you'll probably favor it to save your records from scratches. It does take a while to get used to, though, because each successive touch of the in/out button will reverse the direction of arm motion. For record cleaning, you just move the arm slightly off its rest to start the platter turning.

Automatic operation is even more straightforward. Simply unlatch the arm support, select the appropriate platter speed and record diameter with two buttons at the left of the base, and press PLAY. The arm sets down in the leadout groove, plays the disc, and returns to its support (as it does when you begin play manually). If you

Such performance can fairly be called "flawless." In the listening room, it's hard to remember that you're listening to a phono cartridge; the TK-10ML seems to let you listen right through the record to the master tape. And such self-effacement is the ultimate objective of any pickup cartridge. In short, Signet's latest prodigy need make no apology to any competitor of any description at any price.
An Attractive Kenwood Receiver


The virtues of Kenwood’s receivers are well established: high-speed DC circuitry in the company’s so-called zero-switching amplifier stages, and quartz phase-locked-loop digital synthesis in the tuner section. The KR-950 repeats these features relative- ly unchanged in a fresh format—which is no faint praise.

The tuner section can memorize six stations on each band. Though we don’t really pay much attention to the AM sections of home tuners and receivers, the station-pulling power of the one in this model proved so much better than average in our listening tests that it deserves special men-
YOU'RE LOOKING AT THE SIX BEST AUTO-REVERSING DECKS YOU CAN BUY.

Staying ahead of the competition in auto-reversing cassette decks has been an AKAI tradition for the past 14 years. Now we're introducing the all-new GX-R99, a deck that has so many advanced features you'd have to buy six other auto-reversing decks to get them all.

Features like our Computer Record Level Processing System, that sets a tape's bias, equalization and tape sensitivity, measures a tape's MOL, then sets the optimum recording level. A Spectrum Analyzer encompassing MOL display, which displays frequency response with greater accuracy. AKAI's exclusive Auto Monitor. And our super GX heads. So super, they're guaranteed for 17 1/2 years of continuous play.

It's easy to see why the GX-R99, just one of four great AKAI auto-reversing decks, is called the Dragon Slayer. And to find out why it's getting more praise than all the other guys combined, write to AKAI, P.O. Box 6010, Dept. H9, Compton, CA 90224.
The manual tuning advances by 100 kHz (half a channel) per step on FM, 10 kHz (one full channel) per step on AM. As usual, you have the option of either advancing one step at a time (by tapping the appropriate control bar) or moving rapidly up or down the dial (by holding it in). Manual tuning stops at the end of the band, rather than jumping automatically to the opposite end. A big plus is the front-panel tuning "meter"—a series of five red bars that light progressively and gradually (that is, growing brighter as signal levels climb above the threshold point) to show you what you're getting from your antenna. This is a big help if you have a rotator.

As in many receivers, the mode switch automatically defeats the muting when it's in the mono position and provides no override when in stereo. A stereo muting override really isn't needed, however, because the muting and stereo thresholds are both at 20 dB, where stereo reception is almost unlistenable noisy. (In mono, the signal-to-noise ratio is still well above 50 dB at the muting threshold.) Sensitivity, selectivity, and capture ratio are typical of today's best receivers, as are the remaining measurements for this section.

To accommodate moving-coil pickups as well as fixed-coil ("MM") models, the preamplifier section offers a switchable head amp in the phono section. The shunt capacitance in the fixed-coil position is higher than average, but most pickups should take the measured 265 picofarads in stride, provided the tonearm lead capacitance is low. (One reason for keeping this figure down is that it can always be raised if necessary with outboard capacitors, but it usually is difficult or impossible to reduce.) The low filter is too gentle (at 6 dB per octave) to be very effective against the infrasonic signals generated by severe record warps; fortunately, the head amp has some inherent low-frequency rolloff, adding more than 8 dB to the filter's 5-Hz attenuation.

The high filter also is very gentle, softening hiss but certainly not eliminating it. The tone controls are the shelving type (the bass, classically so) with a range of very close to ±10 dB—roughly, below 100 Hz and above 7 kHz, respectively. The loudness compensation, which is unaffected by the volume setting, shelves the bass below about 100 Hz at a level 11 dB higher than that of the treble above about 1 kHz. There is no buffer in the tape outputs (the connection between them and the aux input is direct). This setup ensures minimum possible noise and distortion in the tape feed, but some attached tape decks may adversely affect the signal through the amplifier when they're turned off.

The amplifier section is quite powerful, with low distortion. It easily exceeds its rating (80 watts, or 19 dBW) into 8-ohm
The New Boston C700.

Good enough for your living room. Tough enough for your car.

This is the new Boston C700 two-way automotive speaker system. We designed it to meet the same high standards we set for our home speakers. The C700 is a component-quality speaker system. It has a long-throw 5 1/4-inch polypropylene woofer, our optical-precision CFT/2 1-inch copolymer dome tweeter, and a five-element crossover network. Both drivers use high-technology materials that survive extremes of temperature and humidity that can destroy ordinary car speakers. We have baked the C700 to make sure it would play on sunny days, and frozen it in dry ice to make sure it would play on cold days. We have submerged it in water, taken it out and played it, to make sure it would play on rainy days. To provide better protection against accidental overload, we added a “smart” tweeter protection circuit that makes changing fuses a thing of the past.

Although the C700 will probably be the most reliable part of your car music system, it is also a Boston Acoustics speaker. We designed it, we build it, and we expect you to judge it on the basis of its acoustic excellence. When you do, we think that you will choose the C700, even over car speakers that cost more. It delivers the performance and value that have quickly earned Boston’s reputation among listeners and reviewers around the world.

Send us this coupon (or write us) to receive a free, full-color leaflet describing the C700. If you wish (it isn’t necessary), write in your daytime phone number, we’ll call you, give you the name of your nearest C700 dealer, and answer any questions about the C700 or other Boston products.

Boston Acoustics, Inc.
247 Lynnfield Street
Peabody, MA 01960

Boston Acoustics
Nakamichi didn’t invent auto reverse... We perfected it!...The RX-505

If you’re willing to gamble performance, choose any auto-reverse deck. If gambling isn’t your style, audition the RX-505—the auto-reverse deck that meets Nakamichi standards of perfection.

We invented the Discrete 3-Head configuration to ensure you of total performance. We know that only physically discrete recording and playback heads can be adjusted for perfect magnetic azimuth and optimized to utilize a tape’s full potential.

We invented the Asymmetrical Dual-Capstan Diffused-Resonance transport to eliminate vibration-induced flutter and isolate the tape from reel perturbations. We perfected the transport so inter-capstan guides and pressure pads aren’t required. With them removed, scrape flutter is gone and music emerges with incredible clarity.

We created precision equalizers and direct-coupled electronics to match our unique recording and playback heads and ensure unparalleled response and remarkably low distortion.

Until now, these technologies couldn’t be applied to an auto-reverse deck that records and plays in both directions. Our newest creation—UDAR—Unidirectional Auto Reverse—changes that.

UDAR is a radically new concept in auto reverse. Tape doesn’t change direction; the head doesn’t "flip over." Such tricks cause azimuth misalignment and destroy frequency response. Instead, UDAR turns the cassette as you do by hand. UDAR is fast, reliable, and gentle. And, since the tape always moves in the same direction, there’s no bidirectional azimuth error. The RX-505 provides Nakamichi performance on both sides!

Learn what perfect auto reverse is all about. Audition the RX-505 at your Nakamichi dealer. It has everything you expect from Nakamichi—and many unique features that make auto-reverse recording easier than ever. You’ll also find the RX-303—a 2-Head deck with the same transport and many of the features of the RX-505.

For more information, write Nakamichi U.S.A. Corporation, 1101 Colorado Avenue, Santa Monica, CA 90401.
Advent's First Three-Way Loudspeaker

Until now, it was virtually an article of faith that Advent would never introduce a loudspeaker like the 6003. One of the last things we would have expected was a three-way model from the manufacturer who for so many years had championed the advantages of two-way design. The people behind the new product say that this was not a step lightly taken, but that they felt the requirements of the very best music sources—fully digital recordings especially—demanded it. The challenge was to develop a three-way capable of reproduction superior to that of the best two-way they could build.

Typically, a good three-way loudspeaker will have better power-handling, lower distortion, and more uniform dispersion than a comparable two-way speaker. But the addition of a separate midrange unit makes obtaining smooth frequency response and good driver blending more difficult. Not only must the quality of the drivers be high, but they must be joined by a very carefully designed— and usually rather elaborate— crossover network.

In the 6003, frequencies above 4.5 kHz are handled by an improved version of Advent’s Direct Report tweeter, first introduced in the Model 5002 (test report, March 1981). This is a 1-inch dome driver with a high-temperature voice coil immersed in ferrofluid to increase its power-handling capacity. The woofer is a 10-inch acoustic suspension unit that reproduces the range below 750 Hz. For the 2½ octaves in between, Advent has developed an entirely new polypropylene midrange driver approximately 5 inches in diameter, with a 2-inch central dome. The outer part of the driver, surrounding the dome, is a doughnut-shaped ring. As with the tweeter, the voice coil is bathed in ferrofluid. This design is said to combine good power-handling and linearity with wide dispersion throughout the midrange.

All of the drivers are flush-mounted on the front baffle in a vertical array, for low diffraction and stable imaging. A further refinement is the “swept-wing” tapering of the front panel, to reduce the potential for undesirable reflections. The drivers normally are hidden behind a dark brown, removable grille of acoustically transparent cloth. A recess in the back panel holds thumb-screw binding posts for bared wires or spade lugs, and a tweeter fuse.

Advent’s placement recommendations are sketchy, suggesting that you put the speakers where they will sound the best. Diversified Science Laboratories therefore tried several positions before settling on the one used for the measurements reported here, with the speaker’s back against the rear wall. Sensitivity is about average, and the impedance curve is smooth and well controlled. It peaks to 21.8 ohms at bass resonance (about 45 Hz), drops to a minimum of 5.2 ohms at 100 Hz, then rises to 12.1 ohms at 1 kHz before dipping again to a local low of 5.6 ohms at 10 kHz. Thus, the 6003 should be an easy load for any good amplifier.

In DSL’s 300-Hz pulse test, the speaker accepted the full output of the test amplifier (equivalent to 27½ dBW, or 530 watts,
into 8 ohms), delivering a calculated peak sound pressure level (SPL) of 116 1/2 dB. Distortion measurements confirm the 6003's high power-handling capability. At a moderate 85-dB sound pressure level, total harmonic distortion (THD) averages less than 1/2 percent over the entire test range (30 Hz to 10 kHz) and less than 1/4 percent from 100 Hz up. Naturally, distortion rises with increasing level, but even at 95 dB SPL, the average THD is less than 1 percent from 30 Hz to 10 kHz and just over 1/4 percent above 100 Hz. The average distortion approximately doubles at a very loud 100 dB SPL. Aside from the unusually low distortion at bass frequencies, the only peculiarity turned up by the measurements were consistent, small peaks at 160 and 400 Hz (1 1/4 and 2 percent, respectively, at 95 dB SPL), perhaps caused by a driver resonance. They are not audible on music, however.

Third-octave response is within ±4 1/2 dB from below 50 Hz to above 16 kHz on-axis and within ±4 dB off-axis. From about 800 Hz up, it is smoother than these figures would suggest (especially off-axis). Most of the spread is contributed by a rise in the lower midrange and bass. The very close tracking of the on- and off-axis curves confirms Advent's claim of wide, uniform dispersion.

We tried the 6003s in several positions, but wound up doing most of our listening with them placed several feet from any wall. Overall, they sound smooth, clean, and detailed, with a tendency to richness that sometimes thickens voices or imparts an unflattering heaviness to instrumental reproduction. This occasionally prompted us to turn down our preamplifier's bass control, but on much music the effect is inoffensive (or even pleasant, depending on your taste). Stereo imaging is precise and gives a good sense of spaciousness to the sound.

The 6003 is an intriguing and largely successful first outing for Advent on the treacherous waters of three-way speaker design. Making a loudspeaker as complex as this one both good and not too expensive is difficult; Advent's achievement in this regard seems certain to make the 6003 a competitive product in its class.

Manufacturers' Comments

Audionics CC-3 power amplifier, July 1983. Thank you for your very fair and accurate review. The CC-3's higher-than-average steady-state distortion results from the relatively low amount of negative feedback used in the design. As you noted, we are more concerned with stability under dynamic operating conditions than with specsmanship based on conventional bench testing.

We might also mention that our specifications for the bridged mono configuration are very conservative. In reality, it will produce nearly 300 average continuous watts into 8 ohms and almost 400 watts into 4 ohms. The CC-3 is one of the very few amplifiers designed for bridged operation with 4-ohm loads.

Charles Wood
President
Audionics of Oregon

DBX NX-40 noise reduction unit, August 1983. Thank you for your kind remarks. Some minor points:

We have lowered the NX-40's retail price to $129.

The frequency-response curves shown, however uniform, are somewhat misleading because they were made with swept sine waves. We advocate using pink noise to measure all systems—ours or anyone else's—that vary their dynamics with time or input signal, since such a method shows accurately how they will perform with music.

We were a bit surprised to find no mention of the amount of noise reduction available from the unit (greater than 30 dB with most cassette decks). And perhaps some commentary on how the unit sounded on demanding music might have been of interest to your readers.

Leslie B. Tyler
Vice President of Engineering
DBX, Inc.

Technical Editor Michael Riggs replies:
It sounded very good, and it did indeed eliminate all vestiges of tape hiss. Also, David Moran (of DBX) points out that on page 38, third column, the last word of the fourth line should be "output," not "input."
If noise, hum and distortion turn you off, turn on Sansui's new AU-D77X* integrated amplifier for pure, true sound.

Only Sansui offers a trio of exclusive noise-eliminating innovations. First, the unique Super Feed-forward DC power amplifier system routes virtually all types of distortion at all frequencies in the power amplifier.

Then, DD/DC circuitry, another Sansui breakthrough, produces high speed response and unmeasurable TIM in the predriver stage of the power amp.

And finally, Sansui's latest contribution to silent performance, the Ground Free circuit, remarkably reduces Interface Hum Modulation (IHM) distortion in the power supply.

The result is clean, uncluttered music that's virtually free of noise, hum and distortion. (You also get this impeccable performance with Sansui's 130-watt* top-of-the-line AU-D11 II integrated amp.)

One outstanding performer deserves another. The TU-S77X tuner adds a new dimension to the state-of-the-art. Its new FM multiplex decoder improves channel separation and reduces distortion significantly. Also available is the TU-S77AMX tuner which automatically receives and switches to every approved AM stereo broadcast system.

The AU-D77X and TU-S77X make the perfect tuner/amp combination for people who appreciate great technology as much as they enjoy the silence in great sound. Get the "Silent Treatment" at your Sansui audio specialist, or write for literature.

**THE SILENT TREATMENT**
OF COURSE IT’S POSSIBLE TO GET GREAT FM SOUND IN YOUR CAR WITHOUT A PIONEER SYSTEM.
Cars move and radio stations don't. This rather basic precept has always created a lot of havoc for people trying to get good, clear, clean sound on their car's FM tuner.

Because the farther you get from the station transmitter, the weaker the station's signal becomes.

Not to mention the stuff like buildings, mountains, and overpasses that bounce the signal around like a ping pong ball, turning the music into something that sounds like frying mush.

Of course, if you do get lucky and get clean reception, you immediately reach over and crank up the volume to take advantage of this situation.

Leading directly to the other problem. Speaker distortion.

Of course, you do have options in solving these problems. You can find a drive-in radio theater.

Or better yet, you can equip your car with a new Pioneer sound system. A system that features Supertuner III and Maxxial speakers.

Supertuner III is an FM stereo car tuner with reception so clear, you'll think you're listening to a cassette.

Because Supertuner III virtually eliminates three-signal-intermodulation, multipathing, and loss of weak signals. In other words, all the aggravating things that cause you to bang your fist on the dash board of your car.

No other car tuner can do this. At any price. None. A fact that Pioneer continues to prove in road tests against the highest quality tuners currently on the market. Time after time in these tests, Supertuner III is the clear winner.

But what good would this be, if the speakers put back in what Supertuner III has taken out.

That's why you need Maxxial speakers. Extremely efficient speakers that can handle up to 100 watts of Max Music Power. A rating system comparable to one of those used to measure the power handling of Pioneer home speakers.

Which means that you can boost the volume on your favorite song (now that you can receive it clearly) and still get clean, undistorted sound.

Maxxial speakers are a complete line of the most popular sizes. With compact yet powerful Strontium Magnets that enable their big power handling capability to fit into tight spaces. And our line of universal fit Supertuner III's offer digital display, electronic pre-set tuning, auto reverse decks with Dolby.* And more.

So if you want to hear music the way it was recorded and broadcast in the first place, take this word of advice. Park the system you have in your car. And get moving on a new one from Pioneer.
Despite the fact that the Concord HPL-532 is ingeniously designed to fit everybody's car, it's definitely not for everybody. As Stereo Review said, Concord "... is truly an audiophile's car stereo."

And what makes it so different?

**4-GANG FM TUNER**

For extraordinarily clear FM reception, the Concord HPL-532 has an exclusive 4-gang digital tuner that provides exceptional station sensitivity & selectivity.

And to make selecting your favorite stations even easier, it has a 10-station preset memory.

But, as Concord's 22 years of innovative stereo design would lead you to expect, that is only the beginning.

**DC SERVO DRIVE MOTOR**

We've designed an exclusive electronically controlled DC servo tape transport drive.

The result? Superior speed accuracy, lower wow and flutter, and over double the motor life.

**AMORPHOUS CORE TAPE HEAD**

We've also engineered a new match-phased amorphous core tape head design, which means a revolutionary improvement in tape frequency response out to 20,000 Hz.

It's an improvement you'll have to hear to believe.

**TWO WAY/FOUR WAY AMPLIFIERS**

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

In addition, it can deliver 5 watts per channel into each speaker of a four speaker system, because of an ingenious two way/four way configuration and a front/rear low level fader.

All in all it's the greatest full bandwidth power at low distortion you can get in a car stereo without add-on amplifiers.

**OTHER IMPORTANT DIFFERENCES**

With its exclusive signal processor circuitry the HPL-532 will easily handle anything you want to plug into it.

Like Concord's Dolby C.

Or dbx adaptors.

Even imagers or equalizers.

And with lightweight switches and function indicators the Concord HPL-532 is as easy to play at night as it is to play in the daytime.

And because of its front load mechanism, it's even easier to load.

All things considered the Concord HPL-532 is an extra-ordinary car stereo.

Of course at around $600 it's not inexpensive.

But when you add up all its features you might say this.

The difference is worth the difference.

* Dolby is the registered trademark of Dolby Labs.
* dbx is the registered trademark of dbx.

CONCORD
Anything else is a compromise.
CONCORD ELECTRONICS, 6025 Yolanda Avenue, Tarzana, California 91356 (213) 344-9335
SPEAKER SHOPPING TIPS

Pointers on choosing your next set of car speakers, and the significance of placement

ANYONE WHO HAS EVER shopped for car speakers knows how frustrating the experience can be. Meaningful specifications are virtually nonexistent, and it's close to impossible to judge what the speakers will sound like when they're finally installed. Is there a rational way to approach the problem? Can a shopper increase his chances of getting the kind of sound he wants?

We put those questions to the car-stereo people at Bose Corporation. By its collaborative efforts with Delco-GM, Bose has shown just how good a system can sound when it is designed specifically to match a particular automobile's acoustics. But Bose also offers a line of after-market car speakers, and we reasoned that a company dedicated to the field might have some valuable insights into the shopping problem. David Howe, Bose's car-stereo manager, was refreshingly frank with us; while stressing that there are no easy solutions, he offered practical tips.

BY

PETER DOBBIN

THIS FUTURISTIC-LOOKING fellow is Morgan, whose microphone-equipped ears enabled the engineers at Bose to produce the speaker-response graphs displayed on the next page.
Placement Is Important—No matter what speakers you buy, their position in the car will determine whether or not you'll hear what you paid for. The graphs accompanying this article were all generated by Bose and demonstrate what the driver will hear from a pair of 4½-inch speakers mounted in a variety of locations in three different cars. Each graph shows the summed response from microphones placed in a dummy head's ears. The dummy, affectionately known as Morgan, is the tireless worker who helped in the design of the Delco-GM/Bose factory-installed system. (See "The Autophile," November 1982.)

Use these graphs as a general guide when mounting your speakers. Notice, for instance, the difference in response when the same speakers are moved from a Mazda GLC's front doors to its rear side panels. As if by magic, usable output is extended down to about 80 Hz, the deep midrange trough becomes less severe, and the treble response smooths out.

Beware of Buzzwords—Car speaker companies periodically wage war over things like magnet size or cone material. A few years ago, you could actually buy a 6-by-9-inch speaker with an 80-ounce (5-pound!) magnet. Not only did the oversize magnet reduce the speaker's efficiency, but the motor structure was so massive that it tended to rip away from the rest of the speaker when the car bounced over a bump.

Today's new buzzword is "plastic cones," but Howe says plastic has little inherent advantage over paper if the latter is formed properly. And because plastic softens when heated, a plastic speaker that has been cooking under the rear window on a summer afternoon will probably sound quite different from one that's cool.

Specs May Mislead—In just about all instances, specifications should play only a minor part in your buying decision. No standard exists for the testing of car speakers, leaving it open for a manufacturer to choose a measurement technique that makes his models look good. Responding to competitive pressure, other companies then may simply adjust their specs to show similar performance.

On the other hand, a manufacturer's description of his speakers can be revealing, as in the case of crossover frequencies. A three-way speaker with a 2-inch midrange driver crossed over at 5 kHz and a 1½-inch tweeter that comes in at 10 kHz is going to demand special placement. Because of the high crossover point, the "midrange" driver is really being asked to act like a tweeter, and the "tweeter" is actually functioning as a supertweeter. A large-diameter tweeter, however, tends to concentrate its output in a tight, narrow beam. For rear-deck placement, this means that you probably should tilt the rear edge of the speaker up a bit, so that the high frequencies are aimed toward the passenger area. As for low frequencies, the larger the driver, the better the chance of achieving good output.

Construction Counts—You can get an idea of a speaker's quality by examining it carefully. Look for a neat, even plating job. If the finish is chipped or corroded, production-line quality control was probably nil. A poorly made speaker isn't worth the effort and cost to install and will only disappoint you.

Try In-Car Auditions—The rack displays that some discount dealers use to demonstrate speakers will tell you nothing about how a speaker will sound in your car. But Howe feels that
Introducing Audia.
The result of an uncompromising devotion to absolute performance.

Absolute performance is not just an attitude that can be created overnight. Audia was born out of 40 years of Clarion's expertise and success. Audia is an entirely new and unique line of high end, no compromise speakers, amplifiers, equalizers, receivers and tuners, that meet the needs of even the most critical car audio purists.

Perfecting Performance in the Automotive Environment.

The FM Diversity Tuning System, a feature pioneered by Clarion, constantly monitors two FM front ends, picking out the strongest signal in multipath conditions to virtually eliminate annoying "picket fencing" noise.

Typically, automobile interiors create an undesirable harmonic response in the low frequency ranges. The 180 Hz. Acoustic Compensation Control returns the bass to its original deep, clean sound, while it allows the amplifier to run cooler.

The Auto Reverse Deck with Dual-Direction Automatic Azimuth Adjustment is more than just a convenience feature. It precisely adjusts the tapehead to achieve zero-azimuth in both directions so you won't sacrifice high end frequency response.

Extend Your Limits of Perfection.

The entire Audia line represents total flexibility. It will easily interface with other components, allowing you to upgrade at any time and to create the most esoteric sound system.

Audia. A state of the art accomplishment that results from a philosophy of absolute performance.

CAR AUDIO PERFORMANCE
The Art of Sound in Motion.

Clarion Corp. of America, 5500 Rosecrans Avenue, Lawndale, CA 90260
**PANASONIC CQ-S958EU RECEIVER/TAPE DECK**


Manufacturer: Matsushita Communication Industrial Co., Ltd., Japan; U.S. distributor: Panasonic Co., Division of Matsushita Electric Corp. of America, 1 Panasonic Way, Secaucus, N.J. 07094.

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**FM TUNER SECTION**

**FREQUENCY RESPONSE & CHANNEL SEPARATION**

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>Response (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>-12.0</td>
</tr>
<tr>
<td>50</td>
<td>-12.0</td>
</tr>
<tr>
<td>100</td>
<td>-12.0</td>
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<td>10,000</td>
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<tr>
<td>20,000</td>
<td>-12.0</td>
</tr>
</tbody>
</table>

Frequency response: +11.2, -2 dB; 20 Hz to 15 kHz

Channel separation: ≥ 20 dB; 110 Hz to 15 kHz

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**THE PHYSICAL FORMAT** of Panasonic's flagship front end makes it a perfect match for the large, rectangular opening in the dashboard of a luxury European import (BMW, Mercedes, Alfa Romeo, or such). Working with extra front-panel space, the designers of the Supreme Elite CQ-S958EU were free to add several single-function controls, which are a joy to use in comparison with the usual push-pull, twist-twist multipurpose knobs found on most minichassis models. The unit would be even more convenient to operate if all tape and tuner controls were grouped in discrete areas.

Convenience features include five-station memory for each band, manual tuning that steps by whole channels (200 kHz in FM, 10 kHz in AM), scan tuning (which samples about five seconds of each station before moving to the next), tape seek (which skips to the beginning of the next selection or goes back to repeat the current one), automatic capstan disengagement (but not tape ejection) when the power is shut off, and automatic tape reverse. More unusual—and particularly well handled—is a clock display that automatically appears about five seconds after you finish any tuning operation. The frequency button lets you check the station you're listening to and, if you hold in MEMORY, the tuning controls can be used to set the clock time.

Laboratory data for HIGH FIDELITY's autosound equipment reports are supplied by Diversified Science Laboratories; road testing and text are by Robert Long. Preparation is supervised by Michael Riggs, Peter Dobbin, and Edward J. Foster. All reports should be construed as applying to the specific samples tested. HIGH FIDELITY and Diversified Science Laboratories assume no responsibility for product performance or quality.
Computer-controlled ATZ receivers put sensational sound at your fingertips.

Our new line-up of ATZ™ car stereo receivers look terrific and sound phenomenal. Every one has been engineered with pure audio performance and ease of operation in mind. That's why an exclusive Jensen designed and developed computer is built right in the ATZ. It controls all the major functions of the AM/FM Tuner and full logic tape deck for you. So you can just sit back and enjoy the smooth sounds. And all ATZ receivers fit the standard dashboard installation openings, available in virtually all of today's domestic and import cars. So when it's the sound that moves you, let Jensen ATZ receivers point the way.

JENSEN
CAR AUDIO

When it's the sound that moves you.
**The quieting curves provide the key to understanding the Supreme Elite’s behavior on the road. As the signal strength of a stereo broadcast drops below a moderate level (say, 45 dB), the noise level rises rapidly. At just below 33 dB, where the midband channel separation is about 25 dB, the noise level suddenly drops because of two factors: The receiver automatically goes into a blend mode (rapidly cutting separation to only a few dB and thus canceling much of the noise), and the overall output decreases by about 5 dB. As the RF level drops still further, noise begins rising very rapidly again until a 13-dB input is reached. Here the stereo circuitry and its pilot are disengaged (though the output has been essentially mono for all input levels below about 25 dB), restoring most of the overall output before fading it away again.**

Mono broadcasts produce much more consistent results as reception level decreases; unfortunately, the Supreme Elite has no mono-only option. Note that stereo reception delivers 50 dB of noise suppression at three signal levels: 17½, 28, and 43 dB! Between the last two of these figures, noise suppression is poorer than 50 dB; at the first two levels, stereo reception is nominal because of the automatic blend. So we show the highest of the three figures as the only meaningful stereo sensitivity measurement.

The apparently erratic behavior of stereo reception under fluctuating signal conditions (the rule, rather than the exception, in a moving car) is much less disturbing in practice than you might assume. The sound of borderline stations is quite unstable in both level and (particularly) stereo spread, but the "spitting" of noise bursts is minimal despite the rapidity of the fluctuations. Compared to many of the other units we have tested, the Supreme Elite exhibits noise that is very muffled and therefore less intrusive than average. AM reception, too, is relatively noise-free, though the sound is distinctly tubber than usual. Presumably, however, you will be choosing FM when you want good sound, and the AM section is about par in other respects.

The tape section has switching for both playback EQ (120 microseconds for "normal" ferric tapes, 70 for "chromes" and metal) and Dolby B noise reduction. (Incidentally, these controls don't affect FM reception, any adjustment for reception of Dolby FM must be made at the tone controls.) The azimuth of the head doesn't match that of the BASF test tape, as you can see from the rolloff at the high end of the response graph, but performance is very consistent in all respects between the two directions of tape travel, which bespeaks good engineering.

Speed accuracy and stability (wow and flutter) are typical of car equipment as measured on the Diversified Science Laboratories test bench, and no discernible aberrations were added by even the bumpiest part of our on-the-road "test track." This is arguably the most important test of all in terms of audible tape playback quality in a moving vehicle, and our overall impression of the deck in this respect was very favorable.

The separate tone control knobs, equipped with nicely tactile center detents, make it easy to get the subjective sonic balance just right. The "flat" position does impose a slight rise in the treble (½ DB at most, in the region between 5 and 10 kHz), but it's certainly not objectionable. The maximum voltages that can be fed to the line outputs from 100 percent FM modulation or DIN 0 dB on a recorded tape represent clipping level in the preamp, rather than maximum gain, but the ½-volt level should be sufficient for most separate amps. Just don't crank up the volume all the way, or you will get gross distortion.

There is also a built-in amplifier, which has separate outputs for two pairs of speakers. To drive a single pair, you can use a supplied jumper that parallels the front- and back-speaker terminals. The power rating for this four-channel amp is fairly hefty alongside those of conventional car radios, as the data show. The built-in amp will be welcome if you want to install your gear in stages, thereby spreading out the cost of a system that may eventually include separate amps and crossover networks.

That sort of flexibility is perhaps the hallmark of the CQ-S958EU. Its convenience features, performance, and styling make it similar to very high-end models, but it addresses mundane needs as well. Practical posh, you might call it.
Yamaha YCT-800 AM/FM/cassette front end, with tape equalization and Dolby B noise reduction switching, automatic reverse, and automatic eject when power is turned off. Dimensions: 7 by 2 inches (chassis front), 5¼ inches deep; escutcheon, 7¼ by 2¼ inches; "nose," 4¼ by 1¾ inches; main shafts, 5 or 5¾ inches o.c. Connections: bared wires for ignition, battery, power antenna, ground; pin-jack for line outputs; standard coaxial female for antenna input. Fuses: 3-amp in ignition line, 1-amp in battery line. Price: $600. Warranty: "limited," one year parts and labor. Manufacturer: Nippon Gakki Co., Ltd., Japan; U.S. distributor: Yamaha Electronics Corp., USA, 6660 Orangethorpe Ave., Buena Park, Calif. 90620.

We've come to expect fresh thinking from Yamaha, and the company's recently introduced car stereo line doesn't disappoint. With a control scheme that works in ways we haven't encountered before, the YCT-800 front end even sports a unique Maintenance Monitor that keeps track of actual operating time and lights an indicator after 40 hours of use. (The monitor is reset by pressing Presets 1 and 5 simultaneously.) A maintenance kit containing a head-cleaning cassette is supplied with the deck.

The YCT-800 abounds with convenience features that lend the unit a distinct personality. Whenever the deck encounters about 16 seconds of tape with no recorded signal, it automatically skips to the next recording (which usually begins the next side). The tape music seek feature can be used to recue the beginning of the current selection or to fast-wind to the beginning of the next. In addition, there's tape scan—which gives you a few seconds of each recorded selection until you find what you want. The tuner, too, has an automatic seek that operates in either direction, depending on which end of the tuning rocker you push. The same rocker is used for manual tuning. And there are station presets as well—six in each band.

Somewhat more arcane are the two level knobs. The one on the left functions as a conventional on/off/volume control, among several other things. The one at right—which you would expect to be a tuning knob (and this one does pull out to switch to manual tuning)—is used for producing a loudness-compensated level adjustment. To dispense with the compensation, you leave this knob at maximum and adjust volume at the left-hand VOLUME; for maximum loudness compensation, you turn down the left-hand VOLUME and make your adjustments on the right.

There also is a Spatial Expander—the first such device in any car equipment we've tested so far. It's essentially the same as the comparable feature in Yamaha's home gear. In the

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**FM TUNER SECTION**

**FREQUENCY RESPONSE & CHANNEL SEPARATION**

<table>
<thead>
<tr>
<th>Frequency Response</th>
<th>Channel Separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>+1 dB, -1 dB, 33 Hz to 15 kHz</td>
<td>25√22 dB, 40 Hz to 9.5 kHz</td>
</tr>
</tbody>
</table>

**HOW WE TEST CAR STEREO EQUIPMENT**

Diversified Science Laboratories taps line-level outputs to measure tuner, tape, and "preamp" performance; for those front ends equipped with a power-amp stage (what we call car receivers) but lacking line outputs, DSL takes data from the speaker connections. For our road testing, we use an ADS amplifier/crossover/speaker setup, bypassing the power-amp stages of receivers.

AM sensitivity is given in microvolts, and the lower the number, the better. For FM, we plot both the audio signal level and the noise level as a function of RF input. Since car tuners may have various reception modes, a number of curves may appear on the same graph. Finally, some tuners cannot be assigned a 50-dB stereo quieting figure because they are already in mono at that quieting level.
enclosed space of a car, where imaging is rather surreal in most cases, the enhancement may delight some listeners and annoy others.

Finally, there's one physical wrinkle to the design that we took by the provision for moving the control-shaft holes in the escutcheon panel. Most models require you to make out the plastic panel, enlarging the holes sideways toward the nosepiece until they provide the necessary clearance. If the shafts have been moved far enough, the original holes show under the outer edges of the knobs, giving a messy appearance. Yamaha uses snap-out inserts for the shaft holes. Place them one way, and the holes are in the outboard positions; rotate them 180 degrees and pop them back in, and the holes are shifted toward the nose. You can see them behind the knobs, but they're far nearer than the usual holes. (Incidentally, the YCT-800 comes with knobs for the wider shaft spacing. If you want the narrower spacing, your dealer will get smaller knobs whose outer elements won't bind against the nosepiece.)

All these features do rather overload the controls—which, presumably in the interests of an uncluttered appearance, have been kept to a surprising minimum. Yamaha uses a microprocessor to keep track of their multiple functions. Even when you have switched to a different signal source or turned the deck off, the microprocessor will remember your last settings. Let's say that you listen to an AM station and choose local reception. Then you play some tapes, with and without Dolby B noise reduction. You may even stop the car and do some shopping. (The tape ejects automatically when the ignition is turned off.) But when you return to AM, the tuner will be at the same frequency and still switched to LOCAL.

Some of the controls have more than two functions. The most complex is the left-hand VOLUME. Besides the operations of its outer ring (which combines BALANCE with FADER) and its own, aforementioned on/off/volume functions, it accomplishes four more tasks—each triggered by pushing the knob in. The operating mode determines the individual task. If you're playing a tape, the deck will reverse direction. If you're fast-winding in either direction, the deck will revert to playback without changing direction. If you're scanning the tape, the scanning will stop and the deck will continue playing the selection it's on. Finally, if you're in the tuner seek mode, that mode will be canceled at whatever frequency it has reached. That's a good deal to remember. Neophytes will find themselves fumbling until they learn what to push when. The labeling isn't always very helpful and at night is even less so, though there are indicators in the frequency-readout panel for many of the functions. Fortunately, the layout is neat and essentially logical.

As with most car tuners, the stereo FM sensitivity rating is a bit equivocal because separation is reduced as signal level falls to help control noise and the image instability that results when the stereo threshold is crossed. Separation at 1 kHz is about 40 dB at high RF (radio-frequency) signal levels but starts dropping rapidly for input levels below 55 dBf. At 37 dBf (the stereo sensitivity rating point), it is about 18 dB—still definitely stereo, but only just. It is this blending of channels (which cancels stereo noise) that keeps the noise curve from rising as steeply at low RF levels as it does in home gear. By the time the signal strength drops below 25 dBf, reception is essentially mono.

This makes for good behavior under picket-fencing conditions—or any sort of fading or borderliner reception. There is some noise-burst "spitting" in the output, as usual, but there's very little sense of stereo instability—a collapsing and regenerating stereo sound field, which can be dizzying. Although some tuners we've tested don't attenuate the output as rapidly when RF levels fall, and therefore seem more sensitive on a subjective basis, we can't think of a model that has shown better manners in its handling of weak signals. Selectivity is very good, but capture ratio is higher than usual. The AM response is also admirable, and we consider the AM sound to be clearly above average.

On Diversified Science Laboratories' test bench, tape output was rather unstable at high frequencies in the forward direction, suggesting some azimuth mismatch between the deck and the BASF test tape. But the curves certainly are not at all bad, and reproduction on the road was excellent. The transport runs slightly fast, though not by enough to cause concern. Flutter, as measured on the bench, is near average for a car deck, and speed stability was audibly unimpaired by the bumps and turns of our road test.

The tone controls have good range
and characteristics, shelving a bit toward the frequency extremes. The loudness compensation is relatively gentle. When it is turned down about halfway, it induces a rise of only about 2 dB (relative to the midrange) in the bass below 100 Hz and in the treble above 3 kHz. Turned down all the way, it adds a maximum of about 10 dB at 50 Hz plus a shelf of about +3 dB at 5 kHz and above. If you want more drastic compensation, you can always add it with the tone controls.

So Yamaha has done it again. Its foray into autosound gear demonstrates a fresh, competent approach to a familiar type of equipment. The most unusual elements in the design will claim attention the first time you examine them. But the real thrust of the YCT-800, as we see it, is in the thoughtful planning of its automatic controls for both good performance and practical music-finding while you're driving. That objective isn't unique to Yamaha, but the solution is.

**SANYO FT-V98 RECEIVER/TAPE DECK**


Most of the car stereo models we review are distinctly on the fancy side, ranging from the somewhat special to the luxurious. This Sanyo receiver is the least expensive unit we've tested to date and, as such, represents an economical after-market option for those not interested in a similarly priced factory-installed model.

The FT-V98's amplifier section provides both front and back outputs as opposed to front-only stereo. On the Diversified Science Laboratories test bench, it checks out to about 15 watts per channel—three to ten times what you might expect from standard models, for 5 to 10 dB greater maximum output. In addition, there's a seek feature that will return the tape to the beginning of the selection you're playing or skip forward to the beginning of the next one. For correct tape playback, the FT-V98 offers both equalization switching and Dolby B noise reduction (which affects FM reception as well, in case you can pick up a Dolby FM station—and identify it.
as such). Further unlike typical factory-installed models, the V98 is engineered for easy hookup. Its wiring harness for power and speakers attaches to the chassis leads at a single multipin connector.

By the same token, you must give up some of the details you would expect in more expensive equipment. The most serious difference, particularly for the long-distance traveler, is the absence of automation in the tuner section: no presets and no scan or seek. As a station fades or begins to pall, considerably more of your attention must be diverted from driving and toward retuning than is necessary with the automated models. In another departure from many of the more luxurious models, the FT-V98 won't automatically eject a cassette when you shut off the power. And the approach to frequency balance is not the "objective" one we have come to expect in car componentry. There are no detents in the tone controls, which constitute a simple two-band equalizer.

This fact required an extra step in the lab. Using mono FM test signals at 100 Hz, 1 kHz, and 10 kHz, DSL adjusted the bass and treble controls for equal output at these three frequencies. All subsequent response measurements were made with these settings. Because of the inherent problems of car speakers and acoustics, they may or may not be the "normal" settings for your car. However, since speakers and acoustics, they may or may not be the "normal" settings for your car. However, since they are the settings chosen for our road tests, they presumably were not identical.

Tape response in the forward direction also shows a progressive downward tilt in the high frequencies, though again we were able to achieve quite listenable results with a tone-control touchup. The great difference between the forward and reverse playback responses, however, will make it difficult to achieve consistent quality from side to side.

The need for frequency touchups makes us wonder for if there is any real point in including an EQ switch. (Perhaps it's just to get that magic word "metal" on the front panel—though the 70-microsecond setting is equally appropriate for chrome, ferricobalt, and Ferrichrome tapes.) The loudness compensation begins introducing a response bump centered at about 50 Hz by the time the volume has been reduced by 10 dB; at lower levels, the high end tilts upward progressively. By the time volume is down 40 dB from its maximum setting, both extremes of the range are reproduced about 12 dB louder than a 1-kHz reference tone. We found the effect rather heavy-handed and preferred to rely on the tone controls for any compensation at low listening levels.

The strongest single performance feature in our on-the-road tests was the mootional stability of the cassette transport. Even on the bumpiest surfaces, the tone remained as free of audible shock-induced waver as that of any deck we've tested. But overall, the FT-V98 is not so apt to bear direct comparison with models costing two or three times as much. Rather, it is a good, modestly priced product (and a good value) with a useful, if not comprehensive, array of features.
INTRODUCING A HIGH-PERFORMANCE TV THAT’LL TAKE ALL YOU CAN GIVE IT.

(For the story behind the headline, turn the page.)

RCA

VIDEO MONITOR
INTRODUCING A HIGH-PERFORMANCE TV THAT WILL TAKE ALL YOU CAN GIVE IT, AND RESPOND TO EVERY COMMAND.

Introducing the SelectaVision Video Monitor and Digital Command Center. A high-performance television with remote control designed to get the most from today's video products. To improve the picture, sound and performance you get from them. To make them easier to hook up. And far easier to use.

The SelectaVision Video Monitor works wonders as a high-performance television receiver, with our most advanced color picture and 127-channel tuning including cable. (The model shown actually fits 25" of picture, measured diagonally, in the same width as a 19" set.) Yet as a home video nerve center, it also does things conventional TVs can't.

15 rear input/output jacks allow you to bypass the set's antenna circuitry and plug RCA and other video and audio components—like the system shown—directly into the chassis. That means a sharper picture from video tapes and videodiscs. That also means clean, dependable hookup with jacks instead of nerve-jangling wiring. And you can run the whole show with our 58-function Digital Command Center—switching instantly from broadcast to VCR or videodisc viewing.

You can even hear better sound, because audio jacks permit direct hookup to your own stereo system. That's flexibility no ordinary TV can even approach. For a demonstration of RCA's SelectaVision Video Monitor, see your RCA dealer. You'll see it's more than just a high-performance TV. For more information and a free copy of the "Living with Video" book ( $2.50 retail value), write: RCA Consumer Electronics, Dept. 32-312M, PO. Box 1976, Indianapolis, Indiana 46206.

WE'LL OPEN YOUR EYES.
COMPONENT VIDEO SYSTEMS

What's available: monitors, tuners, and monitor/receivers

The benefits of a component television system are so numerous that it really makes little sense to settle for a conventional all-in-one model with no direct video inputs or audio outputs. Those advantages are most readily apparent in the degree of operating flexibility offered by such a

BY

FRANK LOVECE
# Monitor/Receivers

<table>
<thead>
<tr>
<th>Model</th>
<th>Screen Size</th>
<th>Channels</th>
<th>Video In/Out</th>
<th>RGB Input</th>
<th>Audio In/Out</th>
<th>Controls &amp; Features</th>
<th>Size &amp; Weight</th>
<th>Price</th>
</tr>
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<tbody>
<tr>
<td>Fisher HT-850</td>
<td>25 in.</td>
<td>105</td>
<td>2/1</td>
<td>No</td>
<td>2/1</td>
<td>3-source switching, simulated stereo, 2 speaker systems, 5 W/ch amp</td>
<td>42 by 29 by 20; 167 lbs</td>
<td>$1,200</td>
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<tr>
<td>GE 19PM 4762K</td>
<td>19 in.</td>
<td>130</td>
<td>2/1</td>
<td>No</td>
<td>2/1</td>
<td>3-source switching, MPX jack, simulated stereo, external-speaker terminals, 10 W/ch amp</td>
<td>20¼ by 18½ by 18¼; 63 lbs</td>
<td>NA</td>
</tr>
<tr>
<td>GE 25PM 4888K</td>
<td>25 in.</td>
<td>130</td>
<td>2/1</td>
<td>No</td>
<td>2/1</td>
<td>3-source switching, 12-hour channel blockout, MPX jack, simulated stereo, external-speaker terminals, 10 W/ch amp</td>
<td>24¼ by 21¼ by 20½; 87 lbs</td>
<td>NA</td>
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<tr>
<td>JVC AV-2010US</td>
<td>19 in.</td>
<td>134</td>
<td>4/2</td>
<td>No</td>
<td>4/2</td>
<td>4-source switching, high-contrast filter on/off, external-speaker terminals, 2 speaker systems, 5 W/ch amp</td>
<td>21½ by 19½ by 19½; 62½ lbs</td>
<td>$900</td>
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<tr>
<td>JVC AV-2600US</td>
<td>25 in.</td>
<td>134</td>
<td>4/2</td>
<td>No</td>
<td>4/2</td>
<td>4-source switching, high-contrast filter on/off, text-sharpness control, external-speaker terminals, 2 speaker systems, 5 W/ch amp</td>
<td>26¼ by 24 by 21½; 101½ lbs</td>
<td>$1,100</td>
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<tr>
<td>Magnavox RD-4258SL</td>
<td>19 in.</td>
<td>134</td>
<td>2.4</td>
<td>No</td>
<td>2.4</td>
<td>2-source switching, 3.58-MHz color trap, 1-day/1-event timer, video input-level control, simulated stereo, MPX jack, external-speaker terminals, 2 speaker systems, 5 W/ch amp</td>
<td>20½ by 18½ by 18¼; 82 lbs</td>
<td>$760</td>
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<tr>
<td>Magnavox RC 7320AS</td>
<td>25 in.</td>
<td>105</td>
<td>1/1</td>
<td>No</td>
<td>1/1</td>
<td>3-source switching, audio and video input-level controls, 2 speaker systems, 7 W/ch amp</td>
<td>27½ by 33 by 21½; 170 lbs</td>
<td>$1,200</td>
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<tr>
<td>NEC CT-1901A</td>
<td>19 in.</td>
<td>134</td>
<td>2/3</td>
<td>No</td>
<td>2/4</td>
<td>3-source switching, 3.58-MHz color trap, 1-day/1-event timer, simulated stereo, MPX jack, external-speaker terminals, 2 speaker systems, 5 W/ch amp</td>
<td>20½ by 18½ by 18¼; 53 lbs</td>
<td>$700</td>
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<tr>
<td>NEC CT-2501A</td>
<td>25 in.</td>
<td>134</td>
<td>2/2</td>
<td>No</td>
<td>2/2</td>
<td>3-source switching, 3.58-MHz color trap, 1-day/1-event timer, simulated stereo, MPX jack, external-speaker terminals, 2 speaker systems, 5 W/ch amp</td>
<td>25¼ by 23¼ by 20½; 90 lbs</td>
<td>$950</td>
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<tr>
<td>Panasonic CT-5379R</td>
<td>25 in.</td>
<td>139</td>
<td>3/3</td>
<td>8-pin, 11-pin</td>
<td>3/3</td>
<td>4-source switching, auto shutoff, simulated stereo, detachable remote with VCR functions, 2 speaker systems, 7 W/ch amp</td>
<td>25½ by 19¼ by 18½; 79 lbs</td>
<td>$1,300</td>
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<tr>
<td>Proton 619</td>
<td>19 in.</td>
<td>127</td>
<td>2/1</td>
<td>No</td>
<td>2/2</td>
<td>4-source switching, MPX jack, 3½ W/ch amp</td>
<td>27½ by 19½ by 20½; 79 lbs</td>
<td>$950</td>
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<tr>
<td>Quasar TT-5999W</td>
<td>19 in.</td>
<td>139</td>
<td>3/3</td>
<td>8-pin</td>
<td>3/3</td>
<td>2-source switching, auto shutoff, external-speaker terminals, simulated stereo, detachable remote with VCR functions, 2 speaker systems, 7 W/ch amp</td>
<td>20½ by 19½ by 18½; 55 lbs</td>
<td>$990</td>
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<tr>
<td>Quasar TL 9895W</td>
<td>25 in.</td>
<td>139</td>
<td>3/3</td>
<td>No</td>
<td>3/3</td>
<td>7-source switching, auto shutoff, simulated stereo, detachable remote with VCR functions, 2 speaker systems, 7 W/ch amp</td>
<td>44½ by 35½ by 19½; 160 lbs</td>
<td>$1,350</td>
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<tr>
<td>RCA VM-205</td>
<td>19 in.</td>
<td>127</td>
<td>2/2</td>
<td>No</td>
<td>2/2</td>
<td>3-source switching, video input-level control, external-speaker terminals, VCR videodisc player remote control, mono amp</td>
<td>26 by 17½ by 17½; 58 lbs</td>
<td>$730</td>
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<td>RCA VM-2023</td>
<td>25 in.</td>
<td>127</td>
<td>2/2</td>
<td>No</td>
<td>2/2</td>
<td>3-source switching, video input-level control, external-speaker terminals, VCR videodisc player remote control, simulated stereo, 2 speaker systems</td>
<td>25½ by 22 by 19½; 106 lbs</td>
<td>$1,040</td>
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<tr>
<td>Sanyo AVM 258</td>
<td>25 in.</td>
<td>112</td>
<td>1/1</td>
<td>No</td>
<td>1/1</td>
<td>2-source switching, MPX jack, 3 W/ch amp</td>
<td>25 by 23½ by 19½; 93 lbs</td>
<td>$850</td>
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<tr>
<td>Sharp 19H-800</td>
<td>19 in.</td>
<td>136</td>
<td>3/2</td>
<td>No</td>
<td>3/2</td>
<td>3-source switching, simulated stereo, detachable remote control, 2 speaker systems, 3 W/ch amp</td>
<td>19½ by 19½ by 15½; 64½ lbs</td>
<td>$890</td>
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<tr>
<td>Sharp 20J 580</td>
<td>20 in.</td>
<td>142</td>
<td>2/No</td>
<td>8-pin</td>
<td>2/2</td>
<td>4-source switching; flat, square picture tube, MPX jack, auto shutoff, mono amp</td>
<td>20½ by 15½ by 20½; 68½ lbs</td>
<td>$760</td>
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<tr>
<td>Sylvania RXC-1925L</td>
<td>19 in.</td>
<td>134</td>
<td>2/4</td>
<td>No</td>
<td>2/4</td>
<td>2-source switching, 3.58-MHz color trap, 1-day/1-event timer, video input-level control, simulated stereo, MPX jack, external-speaker terminals, 2 speaker systems, 5 W/ch amp</td>
<td>20 by 18½ by 19½; 60 lbs</td>
<td>$760</td>
</tr>
<tr>
<td>Toshiba CZ-2010</td>
<td>20 in.</td>
<td>133</td>
<td>3/2</td>
<td>No</td>
<td>3/2</td>
<td>4-source switching, flat, square picture tube, detachable remote control, external-speaker terminals, 2 speaker systems, 5 W/ch amp</td>
<td>19½ by 18½ by 15½; 55 lbs</td>
<td>$1,000</td>
</tr>
</tbody>
</table>

1 Measured diagonally.

2 All monitors/receivers have on/off, volume, channel, bass, treble, balance, and manual picture adjustment controls (color, tint, brightness, contrast, sharpness), sometimes in combined controls. Unless otherwise noted, all units contain at least one speaker system for mono reproduction.

3 Dimensions in inches, width by height by depth.
DO
CDs
SOUND
BETTER?

RECORD COMPANIES ARE LEARNING THE HARD WAY THAT MAKING SUPERIOR-SOUNDING COMPACT DISCS DEMANDS NEW ATTITUDES, NEW APPROACHES, AND EXTRA CARE.

THOUGH THE COMPACT DISC SYSTEM has been heralded as a technological breakthrough, the Year of the CD has not gone by without an undercurrent of critical concern. The theoretical advantages of the new digital medium aside, several critics have found that some CDs sound worse than their corresponding LPs.

There have been complaints of a harsh, fatiguing treble sound, a flattened or unstable stereo image, and shifts in the overall ambience of familiar performances. A vocal minority of hard-core analog loyalists damn the Compact Disc for these effects, claiming that they are somehow tied to the digital process itself and are therefore insurmountable.

Several recording engineers and producers, however, believe the problem can be traced back to sloppy handling of original analog master tapes—a sloppiness that becomes audible in the transfer to an unforgiving digital medium. My investigation over the past few months tends to confirm the latter view.

The majority of fully digital CDs—performances recorded, mixed, and mastered digitally, then transferred to CD—have acquitted themselves impressively. Most of the flaws are in CD reissues of analog recordings. Bernie Grundman, who oversees A&M records' top-rated mastering facility in Los Angeles, thinks the problem stems from CD transfer tapes: "Record companies have taken file copies of master tapes and sent them over, rather than going back to the mastering room to pull an exact digital copy of the original."

The file copy is suspect because "an analog generation represents light years of degradation over the original recording," says Elliot Mazer, a veteran engineer and producer whose early interest in digital audio culminated in his production of Elektra's ambitious new demonstration CD, "The Digital Domain." To Mazer, use of an inferior production dub may easily place the resulting CD in an unflattering light compared to an analog disc made from the same program's true master.

The hazards in relying on an analog copy are legion. Inherent anomalies in conventional analog recording and disc cutting have prompted the use of compensatory techniques to doctor tapes for optimum LP or cassette transfer. Heading the list, and cited by every producer and engineer I spoke with, is program equalization, applied during mastering to correct frequency response problems on the LP.

"There are very few studios equipped with exactly the same equalizers and tape equipment," explains Grundman. So even the detailed production notes listed on
master tapes to assist in future tape and disc transfers may not provide an adequate blueprint. "If they read in our notes that we added 2 dB at 5,000 Hz [to the LP lacquer] and try to do the same with a differently sloped equalizer, the result could be a completely different sound."

The variances among analog tape machines cause more complications. "Analog recorders all have low-frequency head bumps," Mazer notes, "and because of that I haven't seen two machines that had the same bass response, even from a single manufacturer." For instance, a specific deck may yield a frequency-response curve in which the program is down by several decibels at 40 Hz, up by an equal or greater amount at 45 Hz, yet ruler flat at 100 Hz. Played back on a unit with different peaks and valleys in the same region, even an unequilized tape would be in trouble. The problem is in fact exacerbated when an engineer follows the production notes and applies the equalization that was intended only for the original tape recorder.

Why, then, are CDs made from any source other than the original master tape played on the original two-track analog recorder? The answer, unfortunately, is that record companies are simply following procedures already set up to create conventional LPs and cassettes. Most major labels are accustomed to supplying later-generation tape copies to their overseas licensees (and, in many cases, to U.S. plants when replenishing stocks of old catalog titles). For pop music, such dubbing always included Dolby-encoded quarter-inch reels recorded at 15 ips—even if the original master was produced on half-inch tape at twice that speed.

Al McPherson, Warner Bros.' chief of engineering and shepherd for the label's CD transfers, acknowledges that this practice may have dominated production of the first CDs in Japan and Germany. Agreeing that original masters remain the best source, he also argues that "the producers of the original recordings are as much at fault as the record companies." By their tight-fisted insistence on keeping the master tape, McPherson claims, producers are forcing record companies to rely on later-generation dubs. He cites Warner's own frustrating experience with "The Nightfly," Donald Fagen's digitally recorded solo debut. But according to engineer Roger Nichols, Fagen and producer Gary Katz were so eager to make a Compact Disc version that they even allowed Sony to use the original tracks in creating demonstration CDs. Nichols recalls their dismay when reports surfaced that "The Nightfly" sounded off-kilter in its European CD version. "I borrowed a copy of the CD—Stevie Wonder's, in fact—and compared it to a digital cassette copy of the master tape that I made with my own Sony digital processor. The imaging had all but disappeared, and Donald's vocal sounded more distant." Warner was contacted, and the label agreed to scrap Polygram's West German plant, postponing American release until Nichols could remaster the album from the original digital tape.

McPherson counters that a primary reason for Warner's failure to catch the market was the lack of a true digital copy in the record company's vaults:

NEW TECHNOLOGIES DIGITAL AUDIO

CD vs. LP: LITTLE THINGS MATTER

The accuracy with which a Compact Disc reproduces the sound of a master tape is no guarantee of listening satisfaction. A case in point is the Dire Straits release "Love Over Gold" (see review, October 1983). The LP (Warner Bros. 23778-1) has been deservedly praised for its excellent frequency range, dynamics, and stereo image. But the CD (Vertigo 900-088-2), despite its lower noise and more solid bass, has a harsh, metallic quality that is very fatiguing.

These impressions come from a direct comparison of the LP and CD. Reports of this kind mean very little, however, unless the playback equipment is specified. I listened to the CD on a Sony CDP-101; the LP was played with a Denon DL-103D cartridge mounted in a special lightweight headshell on a Technics SL-500 integrated turntable with a custom isolation base. My preamp was an Apt/Holman One, whose moving-coil module was designed specifically for cartridges like the Denon. And I listened to both the CD and LP through early vintage Snell Type A loudspeakers.

To investigate the source of the difference in sound between the analog and digital releases, I used a CBS STR-100 test record and a Ballantine precision AC voltmeter to measure the frequency response of the Denon/Apt combination at the Apt's external-processor-loop output. Channel balance was within 1 dB over the entire audible range, so Fig. 1 shows the averaged response of the two channels.

I then attempted to duplicate the cartridge's response curve using two equalizers in series: an octave-band unit and a parametric equalizer. (The combination of the two is much more versatile than either type alone.) Instead of trying to match the individual cartridge channels, I decided to split the already small difference, and the resulting EQ curve appears in Fig. 2.

Though not perfect, the equalization is as close as 15 minutes of careful tweaking could make it. As the curve illustrates, it is slight indeed. Of the 15 equalizer controls in each channel, none was moved by more than 3/4% of its center position, and most by less than half that. To confirm the accuracy of the settings, I applied the equalization to the Compact Disc and compared the one-third-octave spectra of the CD and LP over the same musical passage. Within the 1-dB resolution of the spectrum analyzer, everything checked out okay.

The next step was to determine how the "corrected" CD of "Love Over Gold" sounded in comparison to the LP. Interestingly, the CD was almost identical to the record. But the digital version's lower noise, rock-solid pitch, and superior cleanliness at both frequency extremes made it the preferred choice. The difference between the equalized and unequilized CD sounds was not overwhelming in direct comparison, but the subjective effect of the improvement became very important during extended listening. The test suggests that the LP and CD were both created from the same master tape—the one that was EQed specifically for LP use—and that the LP was cut with considerable care.

I also evaluated several other records...
and their Compact Disc counterparts, using the same correction settings. The results were similar, but not quite as consistent. When I tried the test with the two versions of “The Best of Manhattan Transfer” (Atlantic SD-19319 and 86085-2 for the LP and CD, respectively), I found that the upper midrange was progressively more attenuated as the recording, unpleasantly bright near the outside of the LP, and treble on both the LP and CD sounded more octaves. With source material that is well recorded except for its frequency balance, subtle corrections can make a subjective difference out of all apparent proportion to their size.

But why should we bother with the Compact Disc if some analog productions sound better than their counterparts? The answer depends on your outlook. You can’t tell someone who has just paid close to $1,000 for a player and $20 for each disc to spend another several hundred dollars for an equalizer just to make it all sound “right.” Still, the CD is inherently more accurate and more consistent a medium than the LP. Mastering techniques and playback systems must change somewhat for the full potential of CD to be realized, but this experiment suggests that small changes can bring large benefits.

Ultimately, the responsibility for solving this problem lies with the record companies, who must change the way they record the music and exercise greater care in post-production. Until then, a good octave-band equalizer, especially one that has a high-resolution mode in which the range of its controls is reduced, can improve much of the current software.—E. Brad Meyer

“‘The nylon Curtain,’ also digitally recorded and mixed but unwittingly mastered for CD from an EQed analog copy sent to Japan by CBS. In this case, the mixup wasn’t detected until after CBS had started selling the flawed version in the U.S. ‘It’s just spilled water at this point, because it has been corrected,’” says longtime engineer of choice for years, admits his own irritation when he learned that Jones’s multiple-Grammy hit “The Dude” had been issued by A&M on Compact Disc without either his or Jones’s knowledge. Sweden says that he now insists on readying his own digital copies, usually from the original 30-ips half-inch master tape.

There’s already evidence that such production lapses are causing the major labels to be more diligent, too. Several are using the services of Bruce Botnick, an engineer and producer who operates the high-tech consulting company Digital Magnetics. Botnick agrees that the first CDs produced abroad apparently were made from later tape generations, but he’s convinced that U.S. labels are moving quickly to avoid future gaffes.

CBS’s response to the need for tighter quality control was, according to Botnick, incredibly rapid: “I brought the problem to their attention, and they began checking the product immediately.” Botnick’s company was subsequently enlisted by CBS to take over digital mastering of old analog recordings, and he travels to the original studios to make properly equalized digital copies. Warner’s McPherson says that similar measures are being taken with his company’s CD transfers. Digital cassette copies, for instance, are now employed to track quality control, with McPherson supplying them to producers and engineers of the original works as needed.

Meanwhile, A&M’s Grundman uses his Los Angeles mastering facility as a CD crow’s nest, supervising digital transfers on the premises. Because most of the label’s albums are mastered there, he has easy access to the correct master tapes and knows the specific requirements of each. In handling albums mastered elsewhere, he insists on the best available tape generation before pulling a digital copy for CD production.

Engineers are unanimous, however, in suggesting that CDs can really only strive to be a mirror image of what’s on the master. Consequently, if people continue to expect sonic perfection from CDs, then perhaps some recordings should be deemed unsuitable for CD release—at least until effective cosmetic techniques evolve to permit digital touchups.

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**FIG. 1. PHONO PICKUP RESPONSE**

<table>
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<th>DB</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>20</th>
<th>50</th>
<th>100</th>
<th>200</th>
<th>500</th>
<th>1K</th>
<th>2K</th>
<th>5K</th>
<th>10K</th>
<th>20K</th>
</tr>
</thead>
<tbody>
<tr>
<td>HZ 20</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>20</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>500</td>
<td>1K</td>
<td>2K</td>
<td>5K</td>
<td>10K</td>
<td>20K</td>
</tr>
</tbody>
</table>

**FIG. 2. COMPACT DISC “CORRECTION”**

<table>
<thead>
<tr>
<th>DB</th>
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<th>5</th>
<th>10</th>
<th>20</th>
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<td>HZ 20</td>
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<td>50</td>
<td>100</td>
<td>200</td>
<td>500</td>
<td>1K</td>
<td>2K</td>
<td>5K</td>
<td>10K</td>
<td>20K</td>
</tr>
</tbody>
</table>
THE CARVER CD FIXER

When Bob Carver came by recently to drop off his new receiver, conversation naturally turned to other audio topics, including this issue's coverage of the "CD sound" problem. He was particularly intrigued with Brad Meyer's experiments, which paralleled his own in the development of a soon-to-be-released signal processor for Compact Disc players.

Carver says that when he got around to buying a CD player, he was pleased with the improvements in dynamic range, bass impact, and distortion that it provided over analog disc playback equipment. But he also was surprised at how bright and two-dimensional many CDs sounded. Convinced that the digital process itself was not at fault, he set out to discover the real culprit. One of the first things he tried was using an equalizer to match the sound of a CD to that of an LP reproduced with a high-quality analog record-playing system. The cartridge Carver used was a Denon DL-103D—the same model Meyer employed. Consequently, the curves they arrived at are very similar.

Although Carver could get the CD and LP to sound much more alike through equalization, he still felt that the match was not exact—that the LP projected a greater sense of ambience and depth. So he ran each of the two stereo signals—CD and LP—through a matrix that added and subtracted its left and right channels to produce sum (L+R) and difference (L-R) components. This exercise proved very revealing. The basic response differences between the CD and the LP remained much the same (as one would expect), but the variances between the two L+R signals and the two L-R signals were not identical, and except at very low frequencies, the LP's L-R component was about 1/4 dB stronger than the CD's. Increasing the proportion of L-R in a stereo signal has the effect of enhancing its "stereoness," adding a greater degree of separation and ambience. (This is because the L-R signal contains all the directional information; the L+R component is mono.)

Why there should be such a discrepancy is not immediately clear. The most likely explanation is that the cartridge, the disc cutter head, or both exaggerate the vertical modulation of the record groove, which carries the L-R information. (It has long been known that some pickups generate excess L-R in their outputs.) A much more remote possibility is that digital processing in some way diminishes the L-R component of a stereo signal, but it is not evident how this might occur.

Whatever the reason for the difference, Carver thought that it should be possible to obtain the best of both worlds simply by adding the qualities he liked in analog reproduction to the signal from a CD player. So he created the Digital Time Lens, whose block diagram is shown here. The stereo output from a CD player passes through a matrix that separates it into L+R and L-R components, which are then independently equalized. In addition, the L-R signal is boosted 1/2 dB by a low-gain amplifier. The final step is to run the processed L+R and L-R signals through a second matrix that reconstitutes the left and right stereo channels.

For accurate reconstruction, however, the signals going into the second matrix must have the same time-domain relationship as those that came out of the first. But any frequency-response alteration, such as that created by equalization, will cause frequency-dependent delays. Since the equalizations applied to the two signals in the Time Lens are slightly different, so are the delays. The solution is to put a compensatory phase-shifting network into the L+R line ahead of the output matrix.

Carver feels that for Compact Discs in need of its help, his circuit provides a more desirable "analog" balance and ambience while retaining the lower noise and distortion characteristic of CDs.

So far, manufacturers have resisted adopting such labeling, but they have at least started using liner booklets and external merchandising materials to identify true digital products more clearly. As more all-digital recordings are made and engineers learn to tailor their CD remakes of analog masters more consistently, the incidence of digital disappointments should diminish. In the meantime, keep reading CD reviews and pay heed to that ancient admonition: Let the buyer beware.

exaggerated expectations will not diminish until consumers realize that not all CDs are true digital products. The Society of Professional Audio Recording Studios has urged record companies to distinguish between analog-conversion CDs and digitally recorded, mixed, and mastered titles by stating the appropriate information on the packages themselves.

So far, manufacturers have resisted adopting such labeling, but they have at least started using liner booklets and external merchandising materials to identify true digital products more clearly. As more all-digital recordings
Why Put Two Filters into One Great Compact Disc Player?

Kyocera goes to double lengths to make sure there's no distortion in its DA-01 Compact Disc Player. It's got both digital and analog filters—so nobody hears distortion.

The advantage of digital and analog filtering systems.

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

The awesome specs that only digital can provide.

Needless to say, the Kyocera DA-01 comes through with some specs that are mind-boggling: A full 90 dB dynamic range...flat frequency response from 20-20,000 Hz...quiet 90 dB S/N ratio...and total isolation 90 dB channel separation.

And, just in case you didn't realize it, with the fabulous disc player system, as provided in Kyocera's DA-01 Player, there is no contact between disc and playback head. No ticks, clicks, pops, scratches or record wear. And the DA-01 plugs right into your present audio system—Kyocera or others—just like a conventional turntable.

Easy to use, but total control of every function.

The DA-01 is easier to use than a modern cassette deck—slide the compact disc into the disc compartment, shut the door and hit the play button. With the DA-01's feather-touch controls, you can play the whole thing (60 minutes a side)...repeat a track...scan...pause...skip...advance...index...and program up to 24 different segments with an electronic memory. A functional LED digital panel tells you program running time and just where the optical scanner is on the disc.

Why this is the tape that sets the standard.

JVC sets the standard for all VHS videotapes, no matter who makes them.
That's the way it has been ever since JVC engineers originated the format for VHS videocassette recorders.
That's why we feel a special responsibility for manufacturing our own brand of VHS videotape at the highest possible quality level.
For our HG and Super HG videotapes, the process begins with a polyester-base film. Using a new binding system, we coat the film with super-fine magnetic particles, which improves the packing density of the coating. Our own unique dispersion process makes the coating more uniform and sharply reduces the occurrence of drop-out.
The result is videotape that provides a continuously stable picture, with clear, pure colors.
Compared with JVC's own reference tape, our new HG tape has a 2.3 dB higher color S/N ratio; with our new Super HG tape, the improvement is 4.0 dB.
All three grades of JVC videotape, including our Standard formulation, benefit greatly from JVC's extensive pioneering research in VHS tape-to-head dynamics.
So no matter which grade of videotape you prefer, now you know how to pick the brand that sets the standard for all the others.
RCA VJM-2023S TELEVISION RECEIVER

RCA VJM-2023S SelectaVision 25-inch color television receiver, with antenna and composite video inputs and built-in loudspeakers. Dimensions: 25¼ by 22 inches (front), 18¾ inches deep. Price: $1,040. Warranty: "Limited," two years on picture tube, one year on all other parts, 90 days labor. Manufacturer: RCA Consumer Electronics, 600 N. Sherman Dr., Indianapolis, Ind. 46201.

FROM THE FOLKS who brought you color TV as you know it today comes the VJM-2023S color television receiver. The company (need you ask) is RCA, which spearheaded the development of the NTSC broadcast system used in North America and Japan. Although the VJM-2023S is billed as a "SelectaVision Video Monitor," it really is two instruments in one: a 127-channel TV tuner and a 25-inch component video monitor. The tuner section's audio and video outputs feed not only the monitor but also external pin jacks, so that you can record on a VCR or watch on a remote monitor; direct monitor inputs enable you to bypass the RF link when viewing a videodisc or tape, minimizing signal
**VIDEO MONITOR SECTION**

Except where noted otherwise, all measurements were made through the direct video output.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct input</td>
<td>-260 lines</td>
</tr>
<tr>
<td>Through tuner</td>
<td>-281 lines</td>
</tr>
<tr>
<td>Interface</td>
<td>Very good</td>
</tr>
<tr>
<td>OVERSCAN</td>
<td>Horizontal: -10%</td>
</tr>
<tr>
<td></td>
<td>Vertical: 8%</td>
</tr>
<tr>
<td>CENTERING</td>
<td>Horizontal: right: -15/16</td>
</tr>
<tr>
<td></td>
<td>Vertical: up &lt;1/16</td>
</tr>
<tr>
<td>BLOOMING</td>
<td>Negligible</td>
</tr>
</tbody>
</table>

**TV TUNER SECTION**

All measurements were taken at the direct audio and video outputs.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio Frequency Response</td>
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</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Audio S/N Ratio (A-weighted)</td>
<td></td>
</tr>
<tr>
<td>Best case (no video signal)</td>
<td>50 dB</td>
</tr>
<tr>
<td>Worst case (white raster)</td>
<td>42 dB</td>
</tr>
<tr>
<td>Residual Horizontal Scan Component (15.7 kHz)</td>
<td>4899 dB</td>
</tr>
<tr>
<td>Maximum Audio Output</td>
<td></td>
</tr>
<tr>
<td>Main output</td>
<td>1.53 watts</td>
</tr>
<tr>
<td>Tape output</td>
<td>0.46 volt</td>
</tr>
<tr>
<td>Audio Output Impedance</td>
<td></td>
</tr>
<tr>
<td>Main output</td>
<td>600 ohms</td>
</tr>
<tr>
<td>Tape output</td>
<td>322 ohms</td>
</tr>
<tr>
<td>Video Frequency Response</td>
<td></td>
</tr>
<tr>
<td>At 500 kHz</td>
<td>-14 dB</td>
</tr>
<tr>
<td>At 1.5 MHz</td>
<td>1 dB</td>
</tr>
<tr>
<td>At 2.0 MHz</td>
<td>+1/4 dB</td>
</tr>
<tr>
<td>At 3.0 MHz</td>
<td>1/16 dB</td>
</tr>
<tr>
<td>At 3.58 MHz</td>
<td>+2/5 dB</td>
</tr>
<tr>
<td>At 4.2 MHz</td>
<td>-5/4 dB</td>
</tr>
<tr>
<td>Luminance Level</td>
<td></td>
</tr>
<tr>
<td>Gray Scale Nonlinearity (worst case)</td>
<td>-27%</td>
</tr>
<tr>
<td>Chroma Level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-39%</td>
</tr>
<tr>
<td>Chroma Differential Gain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-5/2</td>
</tr>
<tr>
<td>Chroma Phase Error</td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td>+1/2</td>
</tr>
<tr>
<td>Magenta</td>
<td>+5/2</td>
</tr>
<tr>
<td>Blue</td>
<td>+1/2</td>
</tr>
<tr>
<td>Cyan</td>
<td>+10/8</td>
</tr>
<tr>
<td>Green</td>
<td>+8/8</td>
</tr>
<tr>
<td>Yellow</td>
<td>+12/2</td>
</tr>
<tr>
<td>Median error</td>
<td>+6/8</td>
</tr>
</tbody>
</table>

Laboratory data for How Fidelity's video-equipment reports are supplied by Diversified Science Laboratories. Preparation is supervised by Michael Riggs, Peter Dobbin, and Edward J. Foster. All reports should be construed as applying to the specific samples tested. How Fidelity and Diversified Science Laboratories assume no responsibility for product performance or quality.

**THE VJM-2023S’s SECONDARY CONTROLS**

Included are adjustments for color, tint, black level, picture, sharpness, bass, and treble.

Given all these automatic adjustments, you might think there would be no need for manual controls. Apparently, RCA thinks otherwise and has provided a full complement—

- Including tone controls for the audio—
- A mono output is available for recording on a VCR. (It is in the circuit before the

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degradation. For broadcast viewing, the VJM-2023S is a complete television receiver with its own audio amplifier and speakers.

The tuner covers all VHF and UHF channels plus as many as 57 cable channels, including Midband, Superband, and Hyperband (A through I, J through W, and AA through QQ, respectively). Tuning is via a quartz-locked frequency-synthesis system, which enables you to punch up the channel you want on a numeric keypad at the monitor or on the infrared remote control. The remote also enables you to scan up and down through the channels, or to switch back and forth between the current selection and the preceding one with a "previous channel" button. The scan feature can be programmed to ignore channels that are not active in your area. Whenever you change programs, the time and channel number appear on the screen for a few seconds.

The tuner circuitry also includes a number of special features:

- Automatic color/fleshtone correction attempts to maintain the color intensity and fleshtones you've set manually, while automatic contrast/color tracking maintains the proper balance among color, contrast, and brightness, so that rotating the picture control changes only the apparent scene brightness.

- Plus, there is an automatic light sensor that adjusts the picture to compensate for changes in ambient lighting. An automatic sharpness control "tracks sharpness variations and corrects for them," and a "BlackLock Contrast Circuit" is said to maintain black level and picture detail under high-contrast conditions.

---

Given all these automatic adjustments, you might think there would be no need for manual controls. Apparently, RCA thinks otherwise and has provided a full complement—including tone controls for the audio—behind a flip-down door above the screen. Volume is set via up/down buttons on the main panel or on the remote.

Audio purists might grumble about the nondefeatable pseudostereo imposed upon all broadcasts and the lack of detents on the bass and treble, and videophiles may find the absence of detents on the video controls equally frustrating. There's also a nondefeatable loudness contour that boosts bass response by about 7 dB at 100 Hz when the volume has been turned down 30 dB below maximum (response at 50 Hz is up even more).

The VJM-2023S has a built-in stereo power amp, which normally drives left and right side-mounted speaker systems with 5-inch woofers and 2-inch tweeters. The speakers can be turned off with a switch behind the control door. The RCA speakers sound much better than you might expect from a table model, but if you wish, you can connect external speakers to a pair of standard 1/4-inch phone jacks on the rear panel. This automatically mutes the internal speakers. The true audiophile will use an external stereo amplifier, which can be driven from a pair of pin jacks on the rear panel. (The pseudostereo, the volume and tone controls, and the loudness contour affect these outputs, too.) A mono output is available for recording on a VCR. (It is in the circuit before the
VOLUME, BASS, and TREBLE, but oddly, after the pseudostereo "Dual Dimension Processing," which separates the signal into two channels that are then recombined at the tape output.)

Two sets of direct video and stereo audio inputs are provided. The first has corresponding outputs, so that signals can be passed through to another device. A slide switch determines between the current channel and the previous one, display the time and channel number at will, select either auxiliary input, control volume and audio muting, set the clock, and control 26 RCA videodisc player functions and 27 RCA VCR functions! Of course, the videodisc player and VCR must be compatible with the Command Center, but when we think of the three remotes we normally

CONVERGENCE is tested with this crosshatch display. Narrow, well-defined white lines indicate good convergence, with all three electron beams (for red, green, and blue) properly aimed. Wherever the monitor begins to lose convergence, the lines will broaden and become fuzzier. The VJM-2023S exhibits very good convergence for a 25-inch monitor, with most of the error confined to the corners and the upper and lower 10 percent of the screen.

GEOMETRIC DISTORTION, overscan, and centering are checked with this display, consisting of a crosshatch, a circle, and a set of dots. The VJM-2023S's horizontal linearity is excellent, but vertical lines weave noticeably near the center of the screen. Overscan is low vertically and only slightly greater horizontally, and the picture is well centered (though not perfectly so).

HORIZONTAL RESOLUTION is tested with a signal consisting of six tone bursts from 500 kHz to 4.2 MHz (the upper limit of the NTSC system). The monitor's frequency response is approximated by finding the last band in which the individual vertical lines remain clear and distinct. The line pattern is somewhat soft at 3.58 MHz (the fifth band) on the VJM-2023S and completely gone at 4.2 MHz, indicating a horizontal resolution of approximately 260 lines.

Whether the internal circuitry "bridges" the Video 1 line (for looping through) or terminates it in a 75-ohm impedance. Another switch determines whether the Audio 1 input is presented in true stereo or in mono. The second set of audio-video inputs does not provide bridging or a mono option (although a Y-connector can be used to route a mono signal to both left and right inputs). Each video input circuit has a level control to match brightness between sources.

The RCA remote—called a "Digital Command Center"—could have been designed by George Lucas. It's large and, at first glance, intimidating, but we've never seen a more complete arrangement. There are no fewer than 51 buttons. You can turn the system on and off, tune any channel directly or via scan, program the channels to be scanned, switch

RCA's "Star Wars" approach looks mighty appealing—a powerful inducement to go RCA the whole way. With this complex a system, you need good instructions; thankfully, RCA's manual is one of the most thorough and well written we've come across.

Diversified Science Laboratories tested the VJM-2023S's monitor and tuner sections separately, but we also checked its performance as a complete receiver, feeding signals into the RF input and viewing the results on the screen. As a monitor, the VJM-2023S has a bit more horizontal overscan than most others and a typical amount of vertical overscan. The picture is well centered vertically and displaced to the right by a negligible amount. For a 25-inch monitor, convergence is very good: It's difficult to maintain convergence over a large screen.
NEW TECHNOLOGIES  VIDEO

especially when using a 110-degree CRT (as RCA does) to minimize cabinet depth. Misconvergence is worst at the corners and over the upper and lower 10 percent of the screen, but even there it isn't great enough to be noticeable at normal viewing distance. Horizontal linearity is excellent, but vertical lines weave noticeably in the center. This is discernible both on test patterns and on broadcasts with straight vertical edges. Vertical interface, though not perfect, is very good.

Without detents to suggest proper control settings, DSL followed the setup procedure recommended in the owner's manual, which takes only a few moments. With the resulting settings, black retention is excellent (about the best we've seen) and blooming negligible. Gray-scale linearity and chroma differential gain and phase also are unusually good. Red, green, and blue rasters are perfectly pure; color accuracy is very good on the first two and excellent on the third. There's some overshoot entering a white area, and a "whiter-than-white" band just before leaving one, but this should not be noticeable in normal reception. The multiburst pattern is a bit soft at 3.58 MHz and completely gone at 4.2 MHz, which leads us to rate horizontal resolution at approximately 260 lines. The sharpness control has almost no visible effect.

Tuner video response is up at 3.0 and 3.58 MHz; thus, picture sharpness actually is better when the system is used as a receiver than when used as a monitor. The tuner has a fair amount of gray-scale nonlinearity, substantial chroma differential gain, average to above-average chroma differential phase, and a fair amount of noncorrectable chroma phase (hue) error. In these respects, performance as a monitor is definitely better than that as a receiver. The tuner output's luminance level is a bit low and its chroma level high, which convinced us to set color saturation differently on broadcasts than when using the system as a straight monitor.

Because of the nondefeatable synthetic stereo, DSL combined the left and right outputs to measure audio frequency response. (Independent measurements of the left and right outputs indicate that RCA creates its synthetic stereo in the most realistic way, by distributing energy between the channels on a frequency-selective basis.) The measurements were made with the VOLUME at maximum, to eliminate the effect of the nondefeatable loudness contour; the BASS and TREBLE were set to produce equal output at 100 Hz, 1 kHz, and 10 kHz. In all cases, DSL set the modulation level to avoid clipping, which occurs before maximum volume at 100 percent modulation.

Response rolls off at 6 dB per octave below 50 Hz but is within +1 dB, −1½ dB, from 70 Hz to 20 kHz, which is admirable. The tone-control ranges are +10, −14½ dB, at 100 Hz for the BASS, and +13, −9 dB, at 10 kHz for the TREBLE. The signal-to-noise (S/N) ratio is very good by TV standards, and the horizontal-scan component is well suppressed. There's more than sufficient level at both the main and tape outputs, and the output impedances are low, so there's no need to worry about compatibility in that regard.

RCA's VJM-2023S is remarkably compact for a 25-inch monitor, although its weight and lack of handles make toting a chore. While it doesn't quite match the best "separates" we've tested, it outperforms the average TV set by a wide margin and is far more flexible. The VJM-2023S is the obvious centerpiece for an all-RCA component television system, and if you choose to go that way, you've got the remarkable Digital Command Center as your faithful servant.

HF

HIGH FIDELITY
The spirit of the '50s and '60s girl groups is perfectly summed up here by the Chances' lead singer, Arlene Smith: "We were doing what we loved best: getting dressed up at night, going on stage, and singing and dancing."

While a 65-minute videotape cannot duplicate the comprehensiveness of Alan Betrock's meticulously researched book of the same name, "Girl Groups" does manage to convey the sense of irrepressible enthusiasm shared by all of these young female ensembles. Many of these girls were fifteen years old or less and had no experience in the music business; though their groups often faded as quickly as their last hit, that very lack of experience lent a sense of freshness and excitement to their performances.

As with MGM/UA's previous collaboration with Delilah Films, "The Compleat Beatles," "Girl Groups" is constructed as a documentary. Concert and television footage provides a fast-paced performance montage interspersed with brief discussions with songwriter/musicians from the era. Among the best interviews is that with the Supremes' Mary Wilson, who reflects eloquently on her career without the cloying nostalgia that mars the memory of many former stars.

That the Go-Go's and other contemporary female groups got some of their boys-and-parties inspiration from these ensembles is without question. What is perhaps a little more surprising is the way film was used for illustration when the songs were performed on camera. It appears that there was music video before there was MTV. Long before, on "Tell Him," for example, the Exciters roam around a zoo singing to the obvious delight of polar bears, lions, swans, and deer. For "Dancin' in the Streets," Martha & the Vandellas go romping through a Detroit auto assembly line, climbing into unfinished convertibles. Though there is little relation between the lyrics and the visual images, the results are fun. Rudimentary but extremely well-rehearsed unison choreography adds an extra dimension to the black-and-white segments from "Shindig!" and other early rock television shows.

As "Girl Groups" points out, many of these groups were faceless, with the same musicians and singers used from one recording session to the next. Prolific producer Phil Spector, for example, often worked with singer Darlene Love (shown here singing "He's a Rebel"), even though she was primarily known as the lead singer of the Crystals. In some cases—Ronnie Spector, Diana Ross, Martha Reeves—individuals eventually went on to break out of the group mold. (Those who started out as soloists, such as Dionne Warwick, are not represented.) But figuring out who's who among the girl groups is an academic exercise. It's not important who the lead singer of the Angels was, or how many of the Dixie Cups were also in the Blossoms. The material and the sound are what count, and with 25 songs (by Jerry Leiber and Mike Stoller, Carole King and Gerry Goffin, Ellie Greenwich and Jeff Barry) and 17 groups performing them, "Girl Groups" is social and musical nostalgia at its best. —IRA MAYER

**THE WEAVERS:**
*Wasn't That a Time*
Jim Brown, director; Jim Brown, Harold Leventhal, & George Sidney, producers. MGM/UA. MO 100218. $29.95 (ED cdeck)

Sitting in the small movie house beneath New York's Plaza Hotel watching "Wasn't That a Time," I remember thinking that this was the first contemporary musical film I would want to own. A documentary that provides just enough history for those unfamiliar with the Weavers—
the late '40s and '50s folk-sound quartet featuring Pete Seeger, Ronnie Gilbert, Lee Hays, and Fred Hellerman—it is charged with memories for those who "knew them when" and with music that transcends any and all generation gaps.

It was the Weavers whose carefully structured four-part harmonies put On Top of Old Smokey at the top of the charts, who made Leadbelly's Goodnight Irene a national singalong and who, had they not been victims of Senator Joe McCarthy's blacklist, would have had a good chance at changing the national anthem from The Star Spangled Banner to Woody Guthrie's This Land Is Your Land.

The script for "Wasn't That a Time" was written by Hays, who also serves as narrator and wry critic. Hays collaborated with Seeger on such classic pieces of Americana as If I Had a Hammer (originally titled The Hammer Song), Kisses Sweeter Than Wine, and the disc's title song, all included here along with some 20 other numbers. A fitting spokesman, he epimorphizes all that the Weavers stood for—a combination of left-wing political activism, good humor, and a propensity for good times.

"Wasn't That a Time" is built around a 30th (or so) anniversary concert held at Carnegie Hall in 1981. It opens with the wheelchair-bound Hays leading through scrapbooks with Darlin' Cory playing in the background. There are scenes from the Weavers' own reunion-picnic where the idea for a concert and documentary first came up, as well as glimpses of each of the Weavers' individual careers and ever so brief testimonials by Mary Travers, Don McLean, and Arlo Guthrie. An a cappella duct (Hay Una Mujer) between Gilbert and feminist writer-singer Holly Near is among the most dramatic moments, both in its musicality and in the intensity of the communion between the two artists.

The sound is mono but nonetheless outstanding, and the balance of the four voices, guitars, and banjos is quite natural. Simple overhead miking at the picnic and rehearsal segments, in particular, results in a warm, lifelike blend of their distinctive harmonies. The camera work is equally straightforward; there is no fast cutting to keep "the action" going. Some beautifully restored old television clips are artfully inserted at various places.

Though understated, the humanity and the humor throughout are truly overwhelming—no more so than at the end, when a simple title on the screen indicates that Hays died nine months after the Carnegie Hall concert. The closing numbers of that historic summer performance (Good Night Irene and We Wish You a Merry Christmas) prove as moving here as they did in the movie theater; indeed, they are almost as cathartic as the concert itself. —J.M.

Available in CD as a Japanese import only, this pivotal mid-1960s album emerges from its digital makeover with a bit more presence but with many of its inherent production flaws intact. In the process, "E.S.P." uncovers some of the ills of analog stereo masters from the period—ills that may have been masked by LP surface noise.

Producer Irving Townsend doesn't help matters with his stereo placement of the band, although his approach is far from atypical of the time. The rhythm section is split, with Ron Carter's bass parked at the left edge and Tony Williams's drums at the right, a move likely intended to emphasize stereo separation. Instead, it eviscerates the heart of the ensemble: Placing drums at center stage is a live performance standard for some pretty good acoustical reasons. True, the setup does put the front men in bolder relief, and Williams's kit emerges a bit more cleanly from the mix (especially his stick work), but on balance this placement seems a Pyrrhic victory. Too often, Williams sounds almost exiled from the rest of the band.

Davis's trumpet and Wayne Shorter's exquisite tenor sax figures are cleaner, and Carter's double bass looms more palpably. But there are several glaring passages (notably on Mood) where Herbie Hancock's piano is smeared with distortion.

Davis fans seeking a fresh recording won't complain, since current analog copies are presumably several generations removed. But jazz producers mulling contemporary digital dates might consult this set for some examples of what not to do in instrument placement.

—SAM SUTHERLAND

ELECTRIC LIGHT ORCHESTRA:

Secret Messages.

Jeff Lynne, producer. A&M CD 4906 (analog recording; digital Compact Disc) LP SP 4906

Electric Light Orchestra's recent recordings have been leaner than the band's richest pop confessions of the late '70s, placing less emphasis on the overly ornate string arrangements (saturised by no less than Randy Newman on The Story of a Rock 'n Roll Band) in favor of layered keyboards and guitars.

However, even the relatively straightforward songs on "Secret Messages" contain a wealth of sonic detail, and in that respect the Compact Disc is confronted with a worthy test. For the most part, ELO's digital facelift is a successful one, helped considerably by Jeff Lynne's widescreen production. Full-bodied acoustic guitars, keening falsetto harmonies, rumbling bass vocals, and rich canvases of synthesizer voicings all achieve better detail here. At the same time, the flat stereo image that CD renderings can pose is avoided, with most of the original program's depth of sound field preserved.

The album emphasizes fast- or medium-tempo rockers, and Lynne's sharp commercial instincts steer him away from the bold shifts in dynamics that might showcase digital audio's wider parameters. Still, "Secret Messages" is one of ELO's strongest recent albums and proves an infectious set for which the digital leap is mostly beneficial.

—S.S.

JOE JACKSON:

Night and Day.

Joe Jackson, producer. A&M CD 4906 (analog recording; digital Compact Disc) LP SP 4906

Night and Day" marked songwriter Joe Jackson's graduation from enthusiastic but derivative pop-rock to a more fully realized personal approach. Having emulated the richer ensemble styles of jump blues and bebop on his earlier recordings, Jackson used this album to forge a contemporary band setting that featured sweeping keyboards and intricate percussion. Coupled with alternately
impressionistic and romantic songs, that equation earned Jackson his widest popularity yet.

"Night and Day" also exploited the limits of conventional recording, a factor that makes its translation to CD a shrewd move for A&M, which has included the album among its maiden Compact Disc releases. Although recorded on analog gear, these songs are ripe with sonic detail.

The benefits of the transfer can be heard from the opening bars of Another World. Booming tympani strokes exhibit a much deeper, unbridled low bass, while clanging timbales and splashing cymbals signal reduced distortion and improved transient response. Jackson's acoustic and electronic keyboards also have a bit of punch. His often rough-hewn vocal timbre exhibits slight improvements, notably in the clarity of his enunciation. All of these add up to an impressive effort that should satisfy Jackson fans and Compact Disc enthusiasts alike.

---S.S.

QUINCY JONES:
The Dude.

Quincy Jones, producer. A&M CD 3721 (analog recording, digital Compact Disc) LP SP 3721. Half-speed master LP. Nautilus' Mr. 52.

Past reviews of both digital disc and half-speed mastered LP releases from producer Quincy Jones note the paradox of audiophile reissues of his work: Jones's immaculate technique, which uses conventional analog methods so effectively, leaves little room for improvement. But "The Dude," which actually did eke modest gains in half-speed form, again makes new marginal progress in CD. Bass drums, cymbals, deep toms, and other percussion instruments have slightly enhanced presence, while electric bass figures benefit from greater depth. The classy brass and reed choruses that punctuate At no Corrida, Rizzamatraz, and the title song likewise extract more bite from Jones and his studio battalion.

The set's best-known performances are Just Once and One Hundred Ways, sung by the then-unknown James Ingram. Surprisingly, it is these two romantic ballads, with their lush orchestral LP settings, that sound the least changed from their original LP versions.

That any improvements here are modest says more about Jones's seasoned studio art than about any oversight during the transfer, of course. It's safe to bet "The Dude" will prove popular on CD for the format's durability as any other factor. Given a set so easy to listen to, the question of conventional LP wear is elevated to substantial importance.

---S.S.

THE PRETENDERS.
The Pretenders.


T he rough-and-tumble verve of this 1979 debut stemmed in part from its deft rejection of squeaky-clean studio sonics to resuscitate "the virtues of raucous, guitar-dominated rock. A subsequent Nautilus half-speed audiophile LP suffered from too much spit-and-polish during remastering, enhancing Chrissie Hynde's laconic vocal presence at the expense of the band's driving instrumental work.

But this latest incarnation is just dandy, adding clarity to the performances without dulling that slashing, high-decibel attack. Here, the original LP's sense of a pitched battle between the snarling singer and her no-holds-barred partners survives. At the same time there are substantial audible improvements: background noise is sharply reduced; stereo separation is improved; deep bass taps a more visceral punch; and drummer Martin Chambers's splashy cymbals sound crisper and cleaner without the brittle edge sometimes interposed through digital recording. Given the net improvements, and the high quality of the tracks, "Pretenders" is good news indeed for CD enthusiasts in search of no-nonsense rock.

---S.S.

CLASSICAL

COMPACT DISC

LUCIANO PAVAROTTI:
Verismo Arias.

Luciano Pavarotti, tenor. National Philharmonic Orchestra, Ollere de Fabbrizio and Riccardo Chailly, cond. (Ray Mitchell photo) London 190 071 (fully digital Compact Disc price at dealer's option) LP (LP) 10 0000, $12.98 Cassette. (CDS) 20 0000, $12.98.


Confronted with the surpassing tackiness of the package, one may spend too much time gazing at the showmanship that one forgets the contents. The CD presents a less extreme case than the LP, whose larger format gave the folks in marketing the opportunity to sell not only the album but also the sleeve. The cover copy on the LP is printed on a removable band so as to leave the portrait of the artist by one Gerrit Greve unobstructed and suitable for framing. The bluish likeness is one of amateur-painter Pavarotti's own favorites; it says so right on that removable band. What to do with the record, having framed the cardboard, is another question.

Listeners who find they do not want to keep it on their turntables permanently may just have to throw it out. If only London had had the foresight not to mess up the cover art in the compact edition with such unsightly lettering, the purchaser of the CD would have (apart from the better sound reproduction) the real advantage of getting both a desk-size icon and a place to store the disc, the literature and other embellishments all being more or less nondestructively extricable from their protective plastic box.

Oh, yes, the music. In the main, Pavarotti's heart-piercing, plangent instrument does good service, even if at times he slides up to pitch, snarls, and lags or jumps the beat. Though the program consists largely of snippets, he does not abuse them for crass self-display, but seeks in each the essence
of a dramatic situation. The three Giordano excerpts from Andrea Chenier burn with a visionary idealism utterly distinct from the ardent sweep of "Amor ti vieta," two famous minutes from the same composer's otherwise forgotten Fedora.

The Manon Lescaut material, all most convincing, ranges from the romance of "Domna non vidi mai" to the wrenching declaration of "No! no! pazzo son!," which maintains tragic stature even in the perilous sobbing. In the bantering "Tra voi, belle," the singer's lightness evokes his nimble, more elegant days (though a similar attempt to recapture a distant past with the little serenade from Mascagni's Iris falls flat). "La dolcissima effigie," from Cilea's Adriana Lecouvreur, is sung and played with an overripe, drooling sonority reminiscent of the worst Viennese renditions of Lehár, but "L' anima ho stanca," from the same opera, evokes perfectly the passage's sense of spiritual exhaustion. In the address from Puccini's spaghetti Western, Pavarotti's weighty declamations in unison with the orchestra strike the right chord of fatality, though his finest work in the doomsday vein occurs in Werther's Ossianic elegy, "Pourquoi me reveiller?" (sung in French), with its somber movement of wailing sorrow. Massenet's soap opera after Goethe's tear-jerking (also suicide-inducing) novellette dates to 1892, the year of Pagaïucci, which followed by two years its perennial companion piece Cavalleria rusticana, that first strike in the verismo onslaught. All the same, few would classify the Frenchman among the composers of verismo, which is what, according to the name of this album, Pavarotti is investigating here. But the Meyerbeer excerpt, from L'Africaine, which follows an endless gestation premiered posthumously in 1865, is decidedly out of left field, even if Pavarotti sings it in the time-honored, nonoriginal Italian verismo tenors favored. In this instance, it would seem to be the singer's verismo performing tradition rather than the verismo repertoire the contemporary superstar means to showcase, for it is here that he unpacks his least judicious tricks, like a fermata on a high note that threatens to go on forever. Bottes's Mefistofele (1868) isn't remotely verismo either, but what the hell, the two selections fit in well enough, making for a good change of pace, especially "Ghiotto sul passo estremo," delivered with a reflective maturity marred only momentarily by tenseness of tone.

MATTHEW GUREWITSCH

RODRIGO

Concierto Madrigal* for Two Guitars and Orchestra; Concierto Andaluza for Four Guitars and Orchestra.

Celedonio, Cilas, Peppe*, and Angel** Romero, guitars, Academy of St. Martin-in-the-Fields, Neville Marriner, cond. Philips 4000 034-2 (analog recording, digital Compact Disc) (price at dealer's option) LP 5000 598, 5605 561

COMPARISONS—MADRIGAL: Yepes, Monden, Navarro, Philharmonia DG 2531 208

ANDALUZA

Moreno, Garibay, Lopez, Ruiz, Balz, Mex. State Orch. Varese Sarabande VCDM 1000 150

In remastering for CD, Philips has done a bit of judicious repackaging: The Concierto Madrigal, for two guitars, was originally paired with Giuliani's First Concerto, and the Concierto Andaluza, for four guitars, was coupled with Rodrigo's Concierto de Aranjuez. It does make more sense to put the multiple concertos together, and undoubtedly further reshufflings will put straight the few remaining programmatic oddities in the Romeros' discography.

According to common lore—including the liner notes for both the Romero and Yepes-Monden discs—the Concierto Madrigal was composed in 1968 for Pepe and Angel Romero, who premiered it in 1970. Partially true: Joaquin Rodrigo actually intended the piece for the celebrated Presti-Lagoya duo, but upon Ida Presti's death in 1967, he gave the work to the Romeros, who had, around the same time, commissioned the Concierto Andaluza. Still, in an interpretive sense, the Romeros fully own both works, and although there have been other recordings, competing teams have come close to the warmth and finesse of either performance.

The Concierto Madrigal is basically a set of variations, in ten discrete movements, on an anonymous Spanish Renaissance madrigal, Felices ojos mios. These variations take somewhat modern, yet still traditional, Spanish forms—a Fandango, a Zapateado, and a Giraldilla, for instance—as filtered through Rodrigo's conservative orchestral viewpoint. The result is a spirited, rhythmically vital piece, with plenty of opportunity for virtuosic interplay between the two soloists.

The Romeros are not shy about this music, nor is Neville Marriner: The more robust movements are taken at full throttle, and both the guitars and the orchestra are housed in a deep, lush, and rather grand ambience. The Yepes-Monden version, by contrast, has a brighter but disappointingly thinner sound, and the guitar work has that buoyancy cast that Yepes's characteristically clipped attacks give nearly everything he plays. Tempo discrepancies between these versions abound, and in most cases the Yepes-Monden performances are slower—often against both the indication of the tempo marking and the spirit of the movement.

In the quadruple Concierto Andaluza, Rodrigo returns to a more standard three-movement format, and he bases the work (as the title suggests) on themes that, in rhythm and melody, evoke typically Andalusian folk forms. A few other elements are suggested as well—in the last movement, Rodrigo quotes from his Concierto de Aranjuez, and the Adagio sounds like a three-way hybrid of the Aranjuez's slow movement, the so-called Albinoni Adagio, and Ravel's Pavane pour une infante défunte. I have not always been taken with the sound of massed guitars, but here the Romeros manage to make their four instruments sound as one, and as in Madrigal, they are given a gorgeously full-bodied orchestral backing. A competing version, on Varese Sarabande, offers crystalline digital sonics and an immaculate JVC pressing; but to these ears, the Romero analog version, both on LP and CD, is more attractive, and the Mexican guitarist on Varese Sarabande never approach the Romeros' ensemble unity.

Of related interest among Polygram's initial CD releases is Carlos Bonell's pairing of Aranjuez and the Fantasia, certainly the most popular concertos in guitar literature and probably the best known of Rodrigo's works in any medium. When I reviewed this program's LP release (May 1982), I recommended it as one of the finest recordings of these works, both on interpretive and sonic grounds. That endorsement stands, and the digital recordings, warm enough on LP, sound even purer in their CD incarnation.

HIGH FIDELITY
Discovering American Music

One critic's personal odyssey
by Paul Kresh

Riigger (top), Gershwin, and John Alden Carpenter

RECENTLY I WAS RUMINATING over the pages of John Rockwell's informative and infuriating book All American Music when it occurred to me that what American music means to him isn't necessarily what it means to me. I started remembering how I had come to discover the music of my own country in the first place, and wondering whether there really can be such a thing as American music anyhow, and, if there is, what part it has played in my life. And what a complicated, confusing subject it is.

When I was growing up during the Great Depression in the hilly neighborhood of uptown Manhattan known as Washington Heights, my family relegated our wind-up Victrola to my grandfather's room. In the living room stood a shiny floor-length walnut cabinet containing a "superheterodyne" radio—our "home entertainment center." Grandpa never deigned to play a record on the Victrola in his entire life, but he used to let me occupy his quarters when he was out with his cronies, and it was there I used to buy an occasional record out of my meager allowance and the proceeds of my commissions from after-school sales of The Saturday Evening Post. I acquired such treasured examples of what Rockwell calls our "happy babble of overlapping dialogues" as Glow-Worm, The Three Little Words, and the Washington Post March. Of course, in those days there was no John Rockwell to explain American music, or "crosscurrents" and "crossovers" between "popular" and "serious" music, or what was "elitist" and what wasn't. Whatever the Philharmonic played on Sundays was, I suppose, elitist. I did my own crossing over, from Glow-Worm to Liszt's Hungarian Rhapsody (I had no idea he had composed more than one) to Gems from Aida (sung in English by the Victor Light Opera Company), then back again to The Three Little Words and Drigo's Serenade. My developing musical tastes were nothing if not catholic.

Then one evening on The Paul White-man Hour, I heard a performance of Gershwin's Rhapsody in Blue and I couldn't believe it. Here was music that spoke my language, composed in an idiom apparently invented especially for me, complicated enough to be taken more seriously than Glow-Worm as it swung wildly back and forth between strutting joy and self-pitying melancholy. It seemed as much a piece of "real" music as any of those screechy Italian arias Madame Galli-Curci intoned on our scratchy acoustical Victor Red Seals.

I fell in love with Gershwin's Rhapsody and came to despise Liszt's, never noticing that there were stylistic similarities. Nor did it occur to me to regard Gershwin's music, whether his popular tunes, his scores of musical comedies, or his "serious" works, as particularly American. Who made such distinctions? What did it matter, as long as the music moved you?

A few years later I had the thrill of watching and hearing Gershwin and the New York Philharmonic perform Rhapsody in Blue as well as Concerto in F. It was at one of the outdoor concerts in the now vanished precincts of Lewisohn Stadium, high above the hills of Harlem, where so many New Yorkers of my generation got their first taste of live classical music. As I sat there perched on a stone step high up in the cheap seats, the Concerto seemed to my young, untutored mind to offer a kind of musical promissory note on the American dream, all the way through to the Finale's nervous invocation of jangling city sounds.

From Gershwin's Rhapsody, the Concerto, Variations on I Got Rhythm, and musical travelogues for Paris and Cuba, it was but a short step to Porgy and Bess, which I was taken to see when I finally passed algebra by the aunt who listened to the Philharmonic on Sundays. She objected...
to the "cacophony" in the orchestral fabric, which for me evoked the very essence of Catfish Row. I certainly admired the opera, and came to admire it even more when it was later restored to its proper operatic proportions down in Houston.

One day, shortly after I started attending Columbia University, I came across a recording in the library of John Alden Carpenter's Skyscrapers by Nathaniel Shilkret and the Victor Symphony Orchestra. By this time I had acquired a room of my own near school and a record player that was hooked up to a little table radio. I must have played the piece—which took up both sides of three 12-inch 78 rpm discs—dozens of times before reluctantly returning it. Impelled by curiosity to look up the work and its composer, I was fascinated to learn that Carpenter had been born in Chicago in 1876 and had studied music under John Knowles Paine. He wrote Skyscrapers in 1926 for a ballet of city life that was staged that year at the Metropolitan Opera House—where I thought they only did operas like Carmen and Faust. What a strange score that is: with its raucous, start-and-stop rhythm overlaid with a feverish French-inspired impressionism; its piling up of popular and ragtime tunes in broken segments that interrupt each other; the echoing on saxophones of newboys shouting "exy, exy," as they did in the Twenties.

Delivering packages through sizzling streets that summer, I raced along humming passages from Skyscrapers, irritating the critics who had so ungenerously dismissed its arrival and had compared it unfavorably with Carpenter's placed Adventures in a Perambulator, the musical impressions of an infant during an afternoon in a city park. Later I heard Adventures for myself, and Krazy Kat, a ballet based on the antics of the popular comic-strip character, and the Gitenjali cycle of songs inspired by the works of Bengali poet Rabindranath Tagore. I loved them all.

Nowadays, you won't read much about Skyscrapers in books like All American Music. It is, after all, a rather "dated" curiosity and a clumsy one compared with, say, the polished craftsmanship of Copland's Music for a Great City. Carpenter's rapturine rhythms and literal parodies of the popular music of the 1920s and the sounds of a big city probably seem hopelessly naïve to ears younger than mine. If only those ears could hear a better recording than the one Decca wished on us a few years ago: the one Desto wished on us. Later I heard a recording in the library of John Alden Carpenter's Music for a Great City, a chopped-up farrago performed in severely attenuated form by the Vienna Symphony, a piece that has always spoken to me in my own language.

When New Year's Day 1946 dawned, I found a most welcome surprise: my horizons had expanded beyond city music to include Howard Hanson's surging Romantic Symphony, Walter Piston's as stringent symphonies, Paul Hindemith's austere and knotty chamber works, Morton Gould's ballet scores for Fall River Legend and Interplay, and Henry Cowell's elbow-induced tone clusters on piano.

Then came the day I first heard the Third Symphony of Roy Harris, which the music mavens of today tend to turn their backs on after it was enthroned in 1939 as "the best American symphony" ever composed. It has taken some effort to find Harris's 14 other symphonies, but I have managed to hear most of them—the boisterous Fourth, with its jaunty folksong chorales; the elegiac Fifth; that dazzling dance symphony, the succinct, one-movement Seventh. But it is the Third that still bemuses me, with its steely, overarching architecture.

One afternoon, when I was still in my twenties, I caught on the radio a movement from a symphony based on the popular song Bye Bye Blues. How exhilarating that an entire symphonic scherzo should have its origins in that carefree tune! I have never heard another note of it, for the Scherzo was all Columbia ever recorded of Paul Creston's Symphony No. 1. But I have subsequently grown rather fond of the Westminster recordings of his Second and Third. Who plays the symphonies of Creston now? What a loss.

I recall watching Charles Weidman and Doris Humphrey in the '30s in a vivid rust-and-blue production of Wallingford Riegger's intensely syncopated New Dance. My enthusiasm for Riegger developed rapidly, long before he got the New York Music Critics' Circle Award in 1946 for his poulterly Symphony No. 3. I remember going to the Juilliard School to hear a haunting choral setting by Norman Dello Joio of Hart Crane's Brooklyn Bridge. It stirred me as Elliott Carter's enigmatic A Symphony of Three Orchestras—inspired by the same text—has not, despite respectful attention to the latter's sophisticated intricacies.

Oh, that Forties sound! It is out of fashion now, but how we enjoyed ourselves in those days listening to Bernstein's Fancy Free (and On the Town, the Broadway musical that grew out of it), and later his incidental music for the movie On the Waterfront. His Age of Anxiety Symphony based on Auden's poem is inseparable in my memory from the eloquent Robbins ballet, but even on its own, with its astounding jazz-based climactic episode, it is a piece that has always spoken to me in my own language.

So indeed, I found out, do the works by the forebears of these dismissable (according to Rockwell) "symphonists." I was fortunate enough to be listening to NBC one night long ago when Toscanini, in his daring, explosive way, conducted Charles Tomlinson Griffes's The Pleasure Dome of Kubla Khan. I learned then that there was an American brand of impressionism as well as a French one—even before Americans began trekking to Paris to study their craft under Nadia Boulanger. And how many of those there were! Copland, Harris, Piston, Virgil Thomson, Carter—and David Diamond, Elie Siegmeister, Irving Fine, Easley Blackwood, Arthur Berger, Harold Shapero, John Vincent—where would American music be without her? Yet George Whitefield Chadwick wrote his charming Symphonic Sketches, Edward MacDowell his ultraromatic piano concertos, Arthur Foote his Suite for Strings, and yes, Benjamin Franklin his string quartet, without her guidance. I have delighted in them all, and also in the lush excesses of Charles Martin Loeffler's A Pagan Poem, from the era early in this century when every American composer seems to have had three names.

What is American music, anyway? Is it any music by Americans? For Americans? Should it speak to the entire world, or just to us who live here? Should it be stuff that goes down as easy as ice cream, like Siegmeister's simplistic Ozark Ser? Or should it be as tough to crack as a Carter concerto? Were Stravinsky and Bartók, Hindemith and Milhaud, Koechlin, Weill, and Korngold American composers, or should they be disqualified as foreigners? Is there anything American about Alan Hovhaness's Mysterious Mountain? Is the New World Symphony American? Is An American in Paris French? Did Louis Moreau Gottschalk's naive diversions based on minstrel melodies set back our musical progress? Have Ulysses Kay and other black composers, like William Grant Still, who chose the classical routes been partial to their land ortraitors to their race because they never played piano in a whorehouse, like Scott Joplin? If I attend more conscientiously to the flappings of Morton Subotnick's electronic butterflies, will that help me to atone for time lost in my youth innocently enjoying Ethelbert Nevin's Narciss-

The Pageant of P.T. Barnum; Ron Nelson: Savannah Suite; John Powell: Rhapsodic Song for Piano and Orchestra. MERCURY 75095.


FANCY FREE; Music for the Theater; Candida (overture). Fatsia; Mass; Two Meditations; On the Town (ballet music); West Side Story (ballet music). New York Philharmonic, Leonard Bernstein, cond. COLUMBIA MQ 32174 (three discs).

ARTHUR BERGER (1912–1973)


LEONARD BERNSTEIN (1918–1990)

Symphony No. 3 (‘Jeremiah’). Christa Ludwig, soprano; Israel Philharmonic, Leonard Bernstein, cond. COLUMBIA 3.2047 (three discs).

BLUMSTEIN (1905–1964)

Regina (based on ‘The Little Fountains’ by Lillian Hellman). Brenda Lewis, Elisabeth Curton, Carol Brice, Joshua Hecht; New York City Opera Orchestra and Chorus, Samuel Krachmalnick, cond. COLUMBIA ODYSSEY Y 3-35536 (three discs).

MARK BUCCI (1924–1994)

‘Tale for a Dead Ear’; Spring Aria, Summer Aria; Concerto for a Singing Instrument: Vocalise, Tug-of-War, Adele Addison, soprano; James Payne, piano. (Noel Lee: Five Songs from Lark). CRI S 147.

JOHN CAGE (1912–1992)


JOHN ALDEN CARPENTER (1876–1951)


MARILYN CHENEY BEACH (1867–1944)

*Recordings recently out-of-print but still available at some outlets.

©Available in cassette.

Parenthetical information in italic: Additional composers and works represented on the disc.


A RUMOR. The Dance in Place Congo. Los Angeles Philharmonic. Calvin Simmons, cond. (See Carpenter: Krzyz Kat). New World 228.


Rhapsody in Blue (original arrangement for piano and jazz band); Concerto in F for Piano; Preludes for Piano. Eugene List, piano. Berlin Symphony. Samuel Adler, cond. TURNABOUT 34457 ©.


JOHN JORDAN (1886–1917) Symphony No. 1 ("Nordic"). Eastman-Rochester Orchestra. Howard Hanson, cond. MERCURY GOLDEN IMPORTS SRI 37160.


JOHN KNOWLES Paine (1838-1906)
Mass in D. St. Louis Symphony and Chorus, Gunther Schuller, cond. NEW WORLD 262-3 (two discs).

VINCENT PERSICHETTI (1915-)
Symphony No. 8, Louisvile Orchestra, Jorge Mester, cond. (Walther Riegger: Study in Sonority).
Louisville LS 706.

DANIEL PINKHAM (1923-)
Proverbs, for Organ; Miracles, for Flute and Organ; Dances for Harp and Organ. James David Christie, organ; Doron Anthony Dwyer, flute.

WALTER PISTON (1894-1976)
The Incredible Flutist (complete ballet). Louisville Orchestra, Jorge Mester, cond. (Judas Buck: Festival Overture on 'The Star Spangled Banner'). Louisvile 755.

Louisville 766.

Symphony No. 5. Louisville Orchestra, Robert Whitney, cond. (William Kraft: Concerto for Orchestra).
Louisville LS 653.


STEFIE REICH (1936-)
Tehilim. Stevie Reich Ensemble. STEVE REICH. ECM/WARNER BROS. 1215.

WALLINGFORD RIEGGER (1885-1961)
Study in Sonority. Louisville Orchestra, Jorge Mester, cond. (Viscount Persichetti: Symphony No. 8). Louisvile S 706.

Symphony No. 4. Louisville Orchestra, Robert Whitney, cond. (Roberto Gerhard: Alegrias).
Louisville LS 646.


GEORGE ROCHBERG (1918-)
Quartets Nos. 4, 5, 6. Concord String Quartet. RCA ARS 2:4198 (two discs).

NED Rorem (1923-)
King Midas (cantata). Sandra Walker, mezzo-soprano; John Stewart, tenor. (Dominick Argento: To Be Sung Upon the Water). DESTO 6443.

Poems of Love and the Rain; Four Madrigals.

NED Rorem (1923-)
King Midas (cantata). Sandra Walker, mezzo-soprano; John Stewart, tenor. (Dominick Argento: To Be Sung Upon the Water). DESTO 6443.

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HF34

AMERICAN MUSIC
(Continued from page 63)

his A Symphony: Holidays, on the other hand, I am squarely in my own country. Copland's Inscape and his Connotations for Orchestra are as abstract as modern music can get, written in a vocabulary that is up-to-the-minute international; his outdoorsy scores dance us across the prairies; his Music for the Theater takes us to a burlesque show around the corner from Times Square.

And what of American opera, and particularly musical comedy, now that Broadway has become a kind of high-admission museum? Will there be life on the Great White Way after Stephen Sondheim? Now that Porgy and Candide have been restored to their original proportions and graduated to operatic status (Menotti's operas, Weill's Street Scene, and Thomson's Four Saints in Three Acts also began their careers on Broadway), is Sweeney Todd to be next into the opera house? Are the hymnlike tunes to which Thomson set the cabaret proses of Gertrude Stein and the operatic efforts of composers like Jack Beeson and Douglas Moore too elementary for our complex age? Is Philip Glass's Einstein on the Beach more daring for its day than was, in 1947, The Mother of Us All? Would I be well advised to relinquish my enjoyment of the "conservative" operas by Dominic Argento and Thomas Pasatieri for the trendy vagaries of Robert Ashley's "problematically minimal" Perfect Lives (Private Parts)?

American music to me is any and all music that speaks—or, better still, sings—in some sort of American accent. It can be symphonic, operatic, folk, jazz, rock, Broadway, or electronic; it can be regional, nationalistic, universal, simplistic, or sophisticated. The thing I object to is the way our critics tend to judge it according to the dictates of fashion. "Dated" is the pejorative word. But we must be careful not to change our musical clothes and discard last season's favorites for new models whose only interest is their novelty.

I still enjoy Gershwin's Rhapsody in Blue, although by this time I have grown a little numb to its charms. I think some of us who grew up with the Victrola are too prone as adults to cast aside the music we played on it. "I tell you the past is a bucket of ashes," Carl Sandburg wrote in Prairie, but it isn't entirely true. The past stays in us, along with the child, and nurtures and enriches us despite the burden of carrying that bucket. Why shouldn't our composers have searched for their own musical voices in the European lands of our origins? Why shouldn't "symphonic jazz," like Ernst Krenek's, speak with a slight Viennese accent? Listen to Jonny Spielt Auf sometime and decide for yourself. There is plenty of room for a wide variety of musical dialects in our midst. It isn't the musical form or language that counts, but what a genius can make it say.
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Amsterdam Nonet [Klaas A. Posthuma, prod.] NONESUCH 71412B, $5.98. The juxtaposition of one 19th-century work and two contemporary compositions is quite attractive. The chief beneficiary is the Amsterdam Nonet, an ensemble of excellent musicians, who are given the opportunity of demonstrating their versatility and technical proficiency, pianist Marion Pollard, first violinist Else Krieg, and the clarinetist Harry Bijlholt are outstanding.

So little is known of Franz Berwald's music that one is grateful for any new discovery. The Septet recorded here uses the Beethovenian instrumentation but produces a near-Romantic sound, more akin to Weber. (When Schubert imitated Beethoven, he added a second violin and expanded the ensemble to an octet, but Berwald had no knowledge of that at the time.) Berwald was an experimenter, and when the Septet was first performed in 1828 in his native Stockholm it was considered rather bold. He modulates freely and often unexpectedly. His treatment of form is innovative; thus, the second movement is an Aria, bisected by a Scherzo. Here, the virtuosity of the players is particularly evident.

Prokofiev's Overture on Hebrew Themes, Op. 34, was composed in New York in late 1919 at the request of Zimro, an ensemble of emigre Russian-Jewish musicians who had been his classmates at the St. Petersburg Conservatory. The idea was a curious one, since Prokofiev was not Jewish, but after studying a collection of Jewish folk tunes he became interested and produced an effective piece that sounds a bit like "klezmer" music. Zimro gave the premiere in New York on January 26, 1920, with the composer at the piano. The piece was so successful that Prokofiev made an arrangement for full orchestra in 1934, but the original version for sextet is preferable because its true charm lies in the "village music" character. The Amsterdam ensemble performs with excellence, and pianist Pollard is brilliant. Horn player Joop Meijer also deserves special mention.

It is with sadness that we announce the death of Boris Schwarz on December 31, 1983. A Russian-born violinist and musicologist, he was the author of Music and Musical Life in Soviet Russia, 1917-1981 and Great Masters of the Violin. The record reviews in this month's issue are among his last music writings, and his contributions will be missed.—Ed.

BIZET: Carmen.

CAST:

Micaela
Katia Ricciarelli (s)
Frasquita
Christine Barbaux (s)
Mercedes
Jane Berbié (s)
Carmen
Agnes Baltsa (ms)
Don José
José Carreras (t)
Renemando
Heinz Zednik (t)
Dancaire
Gino Quilico (b)
Escamillo
José van Dam (bs-b)
Zuniga
Alexander Mallo (bs)


Never met a recording of Carmen I didn't like. Well, hardly ever. If you run your eye down the list in the current domestic catalog you will find nine complete sets, not counting the present one. They go back to stereo's dawn and keep appearing at intervals of three or four years. You might think it easy to reject all but a few without having to look back over your shoulder to see what you had lost: not so.

For example, I would not wish to be without Sir Thomas Beecham's 1960 version, for nobody since has made Bizet's melodies move as succulently and elegantly. True, Beecham had Victoria de los Angeles as Carmen, a soprano with limpid phrasing, rather than the mezzo customarily employed, and an actress without the sexual aggressiveness you may think vital to Carmen's character. Perhaps Leontyne Price, also a soprano, had more of the wanton in evidence when she recorded with Karajan in 1964, but that was a rough ride. That set also offers one of the two superb portrayals of Micaela recorded by Mirella Freni (the other is with Grace Bumbry as Carmen, Frühbeck de Burgos conducting). For my ears, Maria Callas is Carmen, though she never played the part on stage; so the 1964 Paris recording, conducted by Georges Prêtre, is de rigueur; no parting with that. And would you expect me to jettison Bernstein's 1973 gentle but coiled -spring view of Carmen, with Marilyn Horne's vocally opulent, sexually enriched view of the title role? Nothing doing.

The French language is spoken (and sung) from somewhere further forward in the mouth than Anglo-Saxons are used to.
This is evident when you hear Regine Crespin’s recording for Erato, in other respects an undistinguished rendition. But would you eject the only Frenchwoman presently capable of singing the title role on a major stage? Certainly not.

The two most recent recordings are both of remarkable quality. The first is Solti’s 1976 set with Tatiana Troyanos as a sultry, provocative Carmen, Domingo as Don José (comparable only to his other performance, for Abbado in 1978), Kiri te Kanawa as Micaela, and José van Dam, a prince of toreros. The second is the Abbado; with Domingo are Milnes as the toreador, Ileana Cotrubas as Micaela, and Teresa Berganza, an elegant, imperious, indeed elevated Carmen.

One complication more: There are editions. Old-timers like me grew up with what is now called (not without a curl of the lip) the Choudhens edition, that being the name of the original publisher. This is the one containing recitatives composed not by Bizet but by Ernest Guiraud and first used in the Vienna staging of October 1875. Before Choudhens there was the 1875 Opera Comique score with unaccompanied dialogue, and after Choudhens, indeed quite recently, there has emerged Fritz Oeser’s ur-Carmen, an enlarged spoken-dialogue version restoring words cut from the 1875 rehearsals. The full Oeser makes a long night’s work of the opera. Of the recordings, the Bernstein is Oeser most nearly complete—more complete than some might feel necessary. The older recordings of Beecham/de Los Angeles, Karajan/Price, Prêtre/Callas, and Lombard/Crespin have the Guiraud recitatives, Burgos/Bumbry has the 1875 Opera Comique score, and the rest have Oeser short, Oeser long, or Oeser mostly, as the case may be. But every now and then, Choudhens shines through.

So much for the past, which, as everybody knows, is prelude: On to the new Karajan set, which offers sumptuous playing and singing in the sort of large-scale sonic environment that reminds the listener of the conductor’s offerings in Salzburg’s Grosses Festspielhaus. His is an opera for a large theater, with a full-size orchestra (the Berlin Philharmonic, no less), and a cast of major voices. Karajan is not a man to take the rough when he can have the smooth, so one of the first things you will note about the new recording is the luxurious juiciness of the orchestral playing, the sheer sensual pleasure to be taken from it. Perhaps you will next encounter, and consider, the intensity and overt sexiness of Agnes Baltsa in the title role. To my ears, here is a singing actress approaching Callas in quality—the principal difference between them is that Callas never relaxes, never just pads along, while Baltsa does, very occasionally.

There are fascinating comparisons available among the three current front-
CLASSICAL Reviews

rank Carmen—Berganza, Troyanos, and Baltsa. Each gives full value, and to have available three such wonderful singers in modern recordings conducted by authority figures like Solti, Abbado, and Karajan is to have a choice among splendors.

Karajan’s Don José is José Carreras, touching, melodious, perhaps just a shade self-pitying, but he sings with uncommon grace, and the soft, high B flat that brings the Flower Song to a close is a haunting self-pitying, but he sings with uncommon grace, and the soft, high B flat that brings the Flower Song to a close is a haunting cadence. But his competition is Domingo—indeed, Domingo twice (for Solti and Abbado)—and this is music Domingo might have had tailor-made. There is nothing to rival the measured increase in desperation that Domingo manifests in the closing duet; the climax falls precisely where it should. But Carreras is deeply moving just the same, and gives full value.

Karajan’s choice for Micaela doesn’t quite come off. Katia Ricciarelli seems a tame and mouselike creature, and she swallows her words disconcertingly. French is the one language in which that cannot be allowed to happen. José van Dam confirms for Karajan what he asserted for Solti: that he is the supreme Escamillo of the day, the acknowledged master of a part that bedevils baritones and basses, causing problems of vocal resonance to all but a handful of exponents. In all of the ten current complete recordings, Van Dam is the only satisfactory Escamillo. The French chorus is fine, so the words cut through keenly. The smaller parts are capably handled and the technology cannot be faulted.

But there is one big and (to me) unhappy feature of the new Karajan set, and that is the decision to employ actors for the dialogue. At each transition from music to speech there is a mighty glitch, giving the listener an uncomfortable feeling of not wanting to believe. So disagreeable is the consequence of this double casting that one is tempted to ask whether the bad old Gau-raud recitatives were quite as impossible as has been claimed. Transitions never bothered me in the old days, when I knew no better.

GEORGE MOVSCHEN

MAHLER: Symphony No. 6, in A minor.

It is perhaps significant that Tennstedt chose this work with which to conclude his impressive cycle of Mahler’s nine completed symphonies: Mahler said that his so-called Tragic Symphony was an especially “tough nut to crack,” for conductors as well as listeners, and he accurately predicted that it would be generally appreciated only after all his other compositions were understood. Not discounting the ominous subtitle and the anecdotes surrounding the trademark sonorities (the quietly jangling cowbells that Mahler said represented the last terrestrial sounds penetrating into the remote solitude of the mountain peaks, the hammer strokes in the finale that, according to the composer’s widow, symbolize the “three blows of fate” that bring down the hero), the Sixth Symphony is the most abstract in the set; notwithstanding the emotional forcefulness of its gestures and the broad sweep of its lyrical passages, this is in essence a neo-Classical composition, its progression of ideas based far more on the disciplined development of motivic kernels than on Mahler’s more characteristic alternation of episodes and quasi-programmatic scenarios.

The main interpretive problem has to do with balancing the work’s ebulliently Romantic feeling with its controlled Classical form, and, indeed, most conductors emphasize the former at the expense of the latter. Tennstedt seems to do full justice to both elements. It may be true that individual moments of the Symphony are not as sonically brilliant or as theatrical in effect as those in the versions by Karajan and the Berlin Philharmonic (DG 2707106), Solti and the Chicago Symphony (London...
the entire Mahler catalog. One of the most intelligent performances in

strokes (the third of which the superstitious

listener of this disc: One is presented with

clarinet, and bass clarinet; Darrel Randall, oboe; CRYSTAL S

sions); Oh! Fair Cedaria; I See She Fly's Me; The

Sparrow and the Gentle Dove; Fly Swift, ye

hours; Cinthia Frowns Whene'er I Woo Her; Not

affection; Not All My Torments for the startling

sions); Beneath a Poplar's Shadow; Ah! Cruel Nymph;

Hear; Let Us Dance; Sweeter than Roses; Sparrow and the Gentle Dove;

Swift, ye Hours; Cinthia Frowns Whene'er I Woo Her; Not All My Torments for the startling

sions); Oh! Fair Cedaria; I See She Fly's Me; The

Sparrow and the Gentle Dove; Fly Swift, ye

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K. ROBERT SCHWARZ

Recitals and Miscellany

NICOLAI GEDDA: Anthology of Swedish Songs.

Norbou Gedda, tenor; Jan Eyron, piano [Frank Redman, prod.] BLUEBELL 121, 122, 127, 142, 147, 310, 98 each (distributed by Polygram Special Imports, 810 Seventh Ave., New York, N.Y., 10019).


Every so often, after hearing one of our more self-indulgent contemporary composers complain about the neglect of his art songs (as though he could somehow shame singers and audiences into taking them at his own estimation), I find myself imagining a clutch of grousing songwriters in, say, the Netherlands, castigating that pretentious Elly Ameling who goes all around the world singing in French and German, and serving a Dutch cookie or two only among the encores. If they could bully her into programming their national treasures, so my theory goes, we’d probably all find out why she hadn’t wanted to sing them in the first place.

But it is an uncharitable response. The fact is that every Western nation with any sort of musical heritage has cultivated what we call the “art song” to some degree, and the fruits are well worth sampling both for
the light they shed on the cultures in question and for the opportunities they offer to the singers brought up on them. A particularly elegant and for the first time makes a strong case for the Swedish song tradition as one worth closer international examination.

Sweden was in the German orbit: Emil Sjögren (1853–1918), Wilhelm Stenhammar (1871–1927), and Wilhelm Peterson-Berger (1867–1942) were all central Ro-smar (1871-1927), and Wilhelm Stenham-
Gedda's series makes a strong case for the Swedish tradition.

the excellent Jan Eyron springs and leaps. Gedda's great Swedish predecessor Jussi Björling sang a few of the Peterson-Beger songs. Playing Jungfrun unter Lind, one is struck anew by Björling's irreplaceable timbre; the tone is fresher, too, but not so much as one might have expected (Björling was forty-one, Gedda is inching towards sixty), and it is actually Gedda whose voice ranges most easily, as a "fresh," supple instrument, through the wide span and arch-over-the-passaggio of the first phrases. Just occasionally the comparison works the other way. (Joseph Hilsop recorded one of the Tannahäuser songs with more lyricism but without loss of passion; the "Song of Drunkenness" in Also sprach Zarathustra (disappointing only slightly at the rather sweet conclusion).

"Maids under the linden-tree" and the Opus 5 group of songs i svenskt folkton are notable for their subtle melodic felicity, and this is a keen attraction also with the less sophisticated songs of Sjögren (who composed two cycles on the legendary/historical figure of Tannhäuser, both included here) and Stenhammar. With Gunnar de Frumerie (born in 1908, and apparently, to judge by the jacket photo, present at Gedda's recording sessions), we encounter something recognizably related but distinct. His songs have a sparer, less lush lyricism, and Debussy is as strong a point of reference as any. All of those included here have texts by the extraordinary poet and playwright Par Lagerkvist, Gedda sings them with rapt concentration.

This is a splendid way, at once adventurous and retrospective, for a beloved singer to round out a long recording career. One drawback, serious but fortunately not permanent: The records are presently sold without texts or translations, which means that one must either enjoy them as bits of vocalism and melody (easy enough) or attack the Scandinavian poetry shelves of a big library and wade through them with dictionaries (hard but worth the effort, especially for the poems of Lagerkvist, ibsen, and Strindberg). However, luckily for those who doubt they'd find a week to tackle Swedish songs, I am assured, in a cover letter from producer Frank Hedman that translations are in preparation and will be sent free of charge to anyone who has bought the records without them. My advice is to buy now (you never know whether importers will re-order), and then importune Bluebell for the inserts: Firma Frank Hedman, Ankandmgsatan 13, 171 43 SOLNA, Sweden.
Conductart

High-tech restorations of historical milestone recordings have worked best with early stereo-era materials; results with mono LPs and still earlier 78 rpm discs have been mixed at best. Until now, that is, and Barton Wimble's miraculously successful Conductart series of restorations in superchrome cassettes, superbly processed in real time and Dolby B by In Sync Laboratories ($17.98 each; 2211 Broadway, New York, N.Y. 10024).

As an old-timer who knew most of these early electricals in their original 78s, I can testify that they never sounded as unbelievably live and vivid as they do in these reissues. The hitherto unsuspectedly wide frequency and dynamic ranges are revelations in themselves, as are the minimizations of shellac-disc surface noise. But the most rewarding revelation is that of the unfaded genius and personalities of past titans. Listen to Leo Blech, Albert Coates, Piero Coppola, Wilhelm Furtwängler, Sir Hamilton Harty, Willem Mengelberg, and Walther Straram in their c. 1926-30 "Orchestral Sampler" (C 4130) to hear some of the pioneering recording conductors conduct dramatically alive again!

No less striking are Richard Strauss's Beethoven Fith and Oskar Fried's still spectacular Liszt Mazeppa and Wagner Faust Overture in "Berlin 1928" (C 4128), or the great Karl Muck's incomparable 1927-28 Wagnerian excerpts (C 4133 and C 4136). And the 1928-30 "Concerts Stra- ram. Paris" (C 4134), a Debussy/Ibert/Roussel program that also includes Philippe Gaubert's Ravel Daphnis et Chloé Suite No. 2, reminds us what quintessential Gallic sounds and styles were like before they became dulled.

I haven't yet heard the Mengelberg (C 4129) and Fritz Kreisler (C 4135) examples, nor the 1927 Carlo Sabajan/La Scala complete Puccini Bohème (C 4131-32), but I presume they also make every earlier 78s restoration seem hopelessly inadequate. Further extensions of this unique, truly priceless series can't come along too soon!

Varied instrumental artistry. Even by the loftiest standards of the past, some of today's recording instrumentalists must be ranked high, while many of lesser stature illuminatingly explore an infinite timbral and expressive range. Fritz Mayr and Dieter Kirsch deftly display, for example, the capabilities of the Jew's harp and mandora (a kind of lute) in two quintet concertos by Johann Georg Albrechtsberger conducted by Hans Stadlmair (Orfeo digital/chrome M 03582).

Then, John Torcello enlist top-notch engineering and processing in bravely trying to establish the legitimacy of the modern chromatic/free-bass accordion in a "Music of the Baroque" miscellany (UTC 002, $12; John Torcello Co., 17100 Midwood Dr., Granada Hills, Calif. 91344). And the multitalented expatriate Emanual Sheynkman follows up his recent fine "Art of the Balalaika" (Nonesuch 79034-4, $11.98) with an equally beguiling "Art of the Mandolin" (Nonesuch 78019-4, $8.98), a light program that is magic-carpet transportation directly back to Odessa.

Turning to orthodox woodwinds, a fascinating new star is Karajan's controversial choice as Berlin Philharmonic coprincipal clarinet. Sabine Meyer. Her Mozart Clarinet Quintet (K. 581) with the Philharmonia Quartet Berlin, filled out with a novelty if lightweight Opus 32 Quartet by Joseph Kühnfer (1776-1856), reveal a fully matured artist in soberly Romantic readings given the most vividly realistic presence of any chamber music recordings to date (Deutsche Grammophon digital/chrome 410 870-4. $12.98) [see review, February HF]. And our own clarinet luminary Richard Stoltzman is heard in elegantly bravura, well-recorded, rather heavily accompanied (Mostly Mozart Orchestra) versions of Weber's First Concerto, Rossini's Theme and Variations, and Mozart's K. 315 Andante, originally for flute (RCA Red Seal digital/chrome ARE 1-4599, $12.98).

If my September 1978 praise for the CRD two-disc set of the charming Preston/Pinnock/Savall period Haydn Bach Flute Sonatas made you hanker for a tape edition, here at last it most rewardingly is (MHC 1055, $12.98). And we have the former in...
Who’s the greatest bass player? Just ask Jaco Pastorius.

by Samuel Graham

Since joining Weather Report in 1976, John Francis Pastorius III has become one of this country’s most influential electric bassists. Anyone who has heard him play would understand why; anyone who hasn’t, well, he’d probably be happy to tell you all about it. One thing about ol’ Jaco: He doesn’t suffer from false modesty.

This is not to say that he is an insufferable braggart. On the contrary, as one pundit has said, “If you can do it, it ain’t braggin’ at all.”

Pastorius was born in Pennsylvania and, before he was ten, moved to South Florida. As a youngster he studied a variety of instruments; by the time he was a teenager he had developed his arranging and composing skills sufficiently to work in the music department at the University of Miami. Early stage experience included piano and guitar backup work with a number of touring performers, from the Temptations to Bob Hope and Phyllis Diller.

In the early Seventies, Pastorius played with r&b stalwarts Wayne Cochran’s C. C. Riders, jazz composer/pianist Paul Bley, and multi-instrumentalist Ira Sullivan, among others. (He also claims to have rejected offers to tour with Fleetwood Mac, Jimi Hendrix, and Buddy Miles.) He worked briefly with Blood, Sweat and Tears in 1975 and a year later was asked by keyboardist Josef Zawinul and saxophonist Wayne Shorter to join Weather Report.

It’s easy to see why that premier jazz fusion ensemble wanted him: His technique was marked by both speed and agility, his intonation on the fretless bass unerring, his tone fat and true, and his use of harmonics and double and triple stops fairly unique for the time. He also had a flair for showmanship and, perhaps most of all, a playing style and attitude that clearly said the bass would never be an anonymous rhythm instrument in his hands.

Many would argue that Weather Report’s best work was with Pastorius. “Heavy Weather” (1977) was certainly their most fully realized, commercially successful studio production. But after “8:30” (’79), the thrill was apparently gone; “Night Passage” and “Weather Report” (’80 and ’82), Jaco’s last two albums as a member, are mediocre compared to their predecessors. It was no surprise when he left in ’82 to lead his own bands.

Pastorius’s two most recent LPs feature exotic orchestrations and use a dizzying array of source material, from Bach to Charlie Parker to the Beatles, from r&b to dense, dissonant avant-garde jazz. Perhaps a little more focus is needed, but you cannot fault the guy for lack of imagination. “Invitation,” the newest disc, is an ambitious big-band work recorded in Japan last year. Currently he is working with a smaller six-man unit that includes percussionist Don Alias, guitarist Mike Stern, and saxophonist Alex Foster. The following interview, conducted the day after the band’s November appearance in Los Angeles, found Pastorius in remarkably good spirits.

Backbeat: In a recent interview you said, “I invented the electric bass, and everyone knows it.” What do you really think your biggest contribution to the instrument has been?

Pastorius: Harmonic concept. Not playing harmonics on strings, but harmonic concept. Approaching and knowing how to play changes—whether on [Charlie Parker’s] Donna Lee or on Harlequin, Wayne’s tune from “Heavy Weather”—that’s probably my biggest contribution. I’m more or less the first person just to come up with that facility. The harmonics and the flageolet tones—people would have eventually figured all that out.

Backbeat: What aspect of your playing do you think other bassists have copied?

Pastorius: I don’t listen much, but I hear people hitting harmonics, and I hear them trying to play vibrato, especially when they’re playing a fretless.

Backbeat: Do you think the fretless bass has become more popular since you came along?

Pastorius: Yeah. In fact, half the bass players I know don’t even own fretted basses anymore, which is stupid. If you’ve got something hard to read on a fretless Fender bass, unless you’re the greatest bass player in the world you’re going to play some notes that are out of tune. With frets, at least you stand a chance.

Backbeat: Do you think your own playing has improved and developed since you...
joined Weather Report?
Pastorius: I am blessed to have been able to play with Joe and Wayne every night for six-and-a-half years. I definitely appreciated all sorts of stuff from them, too.

Backbeat: How much do you practice?
Pastorius: None. I work all the time now. I don’t have time. I practice mentally.

Backbeat: To me, the last great Weather Report recording was the studio side of “8:30.” And you played drums, not bass, on two of the songs.
Pastorius: I feel my main instrument is drums, even though I don’t practice and don’t have super facility. My father was a drummer. So I’ve more or less always wanted to be one. That was me playing on Teen Town [from “Heavy Weather”].

Backbeat: Is there anyone that you admire as a bassist?
Pastorius: Gerald Jemmott. James Jamerson, bless his soul—he just died. I like some of the things Larry Graham did with Sly on those first [Family Stone] records. I like some of the things Larry Graham did with Sly on those first [Family Stone] records. I like the way Sting plays, too.

Backbeat: Who are your main jazz influences?
Pastorius: Ron Carter, Jimmy Blanton, Gary Peacock, Steve Swallow. I don’t really have any favorites. It’s like, ‘I’ve got four kids, and none of ‘em is my favorite.’

Backbeat: Not many players have taken the bass as far outside as you have. What inspired you to do that?
Pastorius: Oh, ‘Trane. Ornette, Charlie Parker. When I was young, I used to listen to this Max Roach record with Hank Mobley, Kenny Dorham . . . I couldn’t hear the bass player, so I figured out the horn parts instead.

Backbeat: When you were learning to play, was your grounding as much in r&b as in jazz?
Pastorius: When I started as a kid, within three months I knew every rhythm and blues tune there was in the world, and I could play ‘em on bass, drums, guitar, piano, and saxophone. I was a fanatic.

Backbeat: I remember that it blew my mind when I heard a Sam and Dave tune on your first solo album.
Pastorius: I played bass with them when I was 15. It was pretty wild.

Backbeat: I also hear some kind of connection between your playing and Jimi Hendrix’s. You recorded America the Beautiful with him and he did The Star Spangled Banner, but it goes beyond that. You’ve also done his Third Stone from the Sun and used a lot of effects.

Pastorius: We just happen to have something in common in our musical thinking.

Backbeat: It’s not that you try to be like him, but you both took new approaches to your instrument, and occasionally you end up at the same place he did. To me the word is affinity.

Pastorius: Exactly. He did things with distortion that I hadn’t heard anybody else do except me.

Backbeat: I saw Zawinul and Shorter at your last concert in Los Angeles, so I assume that you’re on amicable terms.

Pastorius: We’re the best of friends. We talk to each other all the time about what Weather Report’s doing and what I’m doing. We set up tours that don’t conflict with each other. We listen to one another’s projects. Hey, man, I never have left Weather Report. That’s a family.

Backbeat: What was the best thing the group did while you were part of it?
Pastorius: Well, as I said earlier. I have four kids, and none of ‘em is my favorite. But I would have to say “Heavy Weather,” a simple tune, and my big band writing was the best contribution to the band was? Pastorius: Well, I’m asking as a fan of the band. On your last two Weather Report records you seemed a little less interested than you had been earlier. You only wrote one tune between the two of them—Three Views of a Secret—and you later recorded it on your own.

Pastorius: I was more interested, actually. It was just getting very hard for me to keep up the pace. Living in Florida, traveling coast to coast all the time, making little or no money. I hate to get into money but that’s what it really is. I finally had to think about doing my own thing.

Backbeat: How about your lack of tunes on those albums?
Pastorius: Well, Joe has so much music—he’s always trying to do his own record. Every year he would put it off to do another Weather Report album. He’s a consummate writer, so I can understand him wanting to do more of his own stuff, but I really didn’t have much of a chance. I would bring music in and play one or two notes, and he’d say, “No, I don’t like it.” Without even listening to the whole thing through.

Backbeat: People know you mostly through Weather Report—few know you from the Wayne Cochran days. What do you remember most about that gig?
Pastorius: I loved everything about it. In many ways, the C. C. Riders gig was my favorite ever. What I’m doing now is very reminiscent of it, and my big band writing is directly influenced by Charlie Brent, who was the guitar player for that band.

Backbeat: The music you’re making now, live, with your six-piece outfit sounds much more open and less arranged than what you were writing for the big band.

Pastorius: With the kind of music that I write, the players have to be virtuosos, and all virtuosos are gonna want to stretch out once in a while. So you need a band where the focus is on individuals, and the small band is much more flexible.

(Continued on page 85)
Joan Armatrading: Track Record
Various producers
A&M SP 4987

Carole King: Speeding Time
Lou Adler, producer
Atlantic 80118

At this point in their very different career paths, Joan Armatrading and Carole King find themselves in surprisingly similar straits. Since the mid-Seventies, Armatrading has been acclaimed by critics as the Woman Most Likely To. But despite a bold swing toward modern rock on her last three albums and a series of convincing tours, she remains only modestly popular. King meanwhile sustains a limited public, despite a succession of major label deals in the wake of her commercial zenith 13 years ago with "Tapestry." Not surprisingly, both "Track Record" and "Speeding Time" are straightforward bids for wider attention.

For the hitless Armatrading, the strategy is simple enough: A&M has reissued 11 of her catalog's most memorable tracks and added two songs coproduced by Armatrading and Steve Lillywhite, who produced 1981's excellent "Walk Under Ladders." What makes "Track Record" a strikingly offbeat anthology is its editorial scheme, which twists the artist's chronology. The album begins with the Caribbean-born, English-bred songwriter's most recent work. But "Track Record" is most revealing when it discards the calendar in the interest of musical logic.

Apart from her distinctively rich, deep alto, Armatrading's musical trademarks include the use of shifting rhythmic schemes, skill at coupling simple rock riffs with more expansive pop melody lines, and a sweet-and-sour romantic perspective conveyed through melting vulnerability or steely resolve. The previously unreleased songs, Frustration and Heaven, dovetail with her recent forays into new rock, but the real standouts are the familiar pieces: the playful rockers (I'm Lucky and Me Myself I); the lilting, up-tempo pop numbers with Caribbean underpinnings (Show Some Emotion); and the dewy early ballads.

King, by contrast, hardly needs yet another anthology. Her retirement from performing and concurrent hermetic retreat have given her so low a profile that she's more a nostalgic figure than a contemporary one. She has long needed a new musical updating to suit the sturdy pop virtues of her best-known work, and "Speeding Time" supplies just that. King is here reunited with Lou Adler, the producer for her epochal early '70s records, and her original lyricist and ex-husband, Gerry Goffin; a new studio band showcases her own shift from piano to synthesizers.

The balance of proven assets and fresh blood is largely successful. King's sturdiness, rhythmic playing style translates well to the multiple keyboards (played in tandem with Robbie Kondor) that frame these songs, imparting a lusher harmonic backdrop while preserving the uncomplicated momentum of her attack. Although the synthesizer emphasis brings her inevitably closer to the latest generation of technopop warblers (any of whom might be her own kids), she avoids gratuitous usage of that firepower. Old ally Danny Kortchmar and session ace Lee Ritenour supply crisp guitar work.

She still comes across as a too-cosmic earth mother at times; the ecological sermon Chalice Borealis abounds in leaden rhymes and heavy-handed imagery. But the same sweetly sad-sawyer-but-wiser persona that enlivened her best solo work reappears on the title song and Standin' on the Borderline. That's a heartening sign, one of several on King's most persuasive album in quite a while.

SAM SUTHERLAND

The Robert Cray Band: Bad Influence
Bruce Bromberg & Dennis Walker, producers. Hightone HT 8001 (P.O. Box 8064, Emeryville, Calif. 94662)

"Bad Influence" is the second album by thirty-year-old Tacoma guitarist and singer Robert Cray, one of the few young black musicians dedicated to playing the blues. His musical direction seems less unusual now than it did in 1980, when his debut, "Who's Been Talkin'," was released on Tomato records. During the past year or so, modern blues recordings have started rebuilding fans through r&b and urban contemporary exposure, suggesting a decline in the inverted racist stigma of the white-rock dominated '60s blues revival.

"Who's Been Talkin'" displayed a hearty, instinctive style that mirrored Cray's debts to white interpreters as well as blues originators. His earlier involvement in rock bands had acquainted him not only with such guitarists as Peter Green and Eric Clapton, but also with his acknowledged inspiration—Magic Sam, Buddy Guy, and Albert Collins. The feel was authentic without smacking of scholarship; it preserved the small-group scale of Chicago blues while introducing elements of modern funk and rock. Best of all, Cray's own songs meshed seamlessly with his choice of standards, matching them in down-home humor and gritty detail.

The new album, however, marks a quantum jump. Cray's singing shows greater range and confidence, while his stinging Stratocaster leads are complemented by more focused, if deliberately low-keyed, rhythm work modeled on classic '60s Memphis r&b records. The Memphis connection extends as well to several of his vocals, especially on Eddie Floyd's Got to Make a Comeback. Moreover, the new band adds alto sax player Warren Rand and the tenor sax of keyboardist Mike Vannice to supply righteous reed choruses.

Cray and quartet also shine in their sense of rhythmic poise, stepping into some nimbly syncopated grooves that owe as much to modern, dance-oriented funk as to classic blues. When they wind into the sizzling So Many Women, So Little Time, their momentum reinforces the tongue-in-cheek lyric with hustling, impatient energy.

"Bad Influence," the debut release of a tiny label from Emeryville, California, surpasses its predecessor in production technique. The earlier recording's slightly flat ambience is replaced here with a fuller,
lucid mix, the finishing touch to a very strong performance. SAM SUTHERLAND

Andy M. Stewart: By the Hush
Andy M. Stewart, producer
Green Linnet SIF 3030

Andy M. Stewart, lead singer with the highly (and rightfully) touted Scottish rock band Silly Wizard, has a voice that would give goosbumps to a choir of angels. It's a sweet tenor, rough around the edges, that's craggy and wavery and perfectly suited for broody ballads about Irish emigrants and doomed trysts, itinerant drunkards, and smug colonialists.

Accompanied by Wizard cohort Phil Cunningham on whistles, accordion, keyboards, and guitar, and by Martin Hadden on guitar and bass, Stewart offers up eight tunes on “By the Hush,” his first solo album. His originals, like the four Irish and Scottish traditional songs, are steeped in lore, inspired by strange village stories, and owe their inspiration to the misty reveries of Celtic tradition.

But while these tunes are drenched in thick, wistful melancholy, they are not innocuous little ditties about maidens and maidsens and kings going off to battle elves in enchanted woods. Patrick Sheenan, a haunting ballad made all the more so by Cunningham’s whistles and organ, describes an Irish farmer who is forced by near starvation to enlist in the English army and then packed off to fight in the Crimean War. Sheenan comes back literally and figuratively a broken man, blinded in battle and alienated from his own countrymen because he joined the “enemy”—the English army. The English get it again in Stewart’s They Wounded Old Ireland, a beautiful—and beautifully venomous—story of political oppression that, sadly, holds as much relevance today as it did 300 years ago.

Steward covers additional terrain here, from a good-humored drinking song (The Rambin’ Rover) to a good-humored stab at fire-and-brimstone religious sects (the a cappella The Parish of Dunkeld). Though the latter is light in tone, it centers around a group of Scottish Protestants who hang a minister, trash his church, and set up a whiskey still so the folk can get sloshed on Sundays.

Throughout “By the Hush,” Stewart sings with intelligence and passion, his voice variably high and plaintive, gentle and precise. On the sorrowful, ironic The Orphan’s Wedding, a tune about ill-fated lovers and incest, Stewart sings “‘And good folk held to the church bells,’” his voice rising and raining to match his lyric. It’s a subtle, sensitive bit of singing, something this quiet gem of a record abounds with.

STEVEN X REA

James Blood Ulmer: Odyssey
James Blood Ulmer, producer
Columbia BFC 38900

On his first two major-label LPs, “Free Lancing” and “Black Rock,” guitarist James Blood Ulmer laid down a fricassee full of pulsedister guitar rhythms, broken melodies, and strange, dissonant structures, an attempt to bring the rock ‘n’ roll element to an instrument that is often thought of as a cliche of jazz. But Ulmer’s approach to the electric guitar is fresh and innovative, and the results are often stunning.

One of the highlights of Ulmer’s work is the song “The Ed Bickert 5.” This tune is a tribute to the late Canadian saxophonist and composer Ed Bickert, who was a great influence on Ulmer. The song is a beautiful piece of music that showcases Ulmer’s skill as a guitarist and composer.

The album also features contributions from other great musicians, including John Scofield, who plays an expressive solo on “The Blues Brothers.” The track is a playful and humorous take on the famous blues group, with Ulmer’s guitar playing driving the tune forward.

Another standout track is “The John Carter Octet: Dauwhe.” This piece is a vibrant and dynamic showcase for Ulmer’s talent, with the guitarist weaving in and out of intricate rhythms and melodies.

Overall, James Blood Ulmer: Odyssey is a powerful and captivating album that showcases Ulmer’s skill as a guitarist and composer. The music is fresh, innovative, and full of energy, making it a must-listen for any fan of jazz or rock ‘n’ roll.
Dizzy Gillespie, James Blood Ulmer has technique. Ears as big and eclectic as his formidable breakdown figure at the end of each chorus. A wash of violin, and a miraculously tight with Near Eastern scalar themes, a soaring tured music.)

His guitar has never sounded clearer or colorful as the red clay of Ulmer's home turf. His guitar, however, has found an inge
colored as the red clay of Ulmer's home turf. His guitar has never sounded clearer or more incise on record, and the balance and subtle interplay among the three musicians never flags in the mix. For all its goodwill"n' flash and sparkle, this is very structured music.)

The closer, Swing and Things, combines a rockabilly drum beat and guitar fills with Near Eastern scalar themes, a soaring wash of violin, and a miraculously tight breakdown figure at the end of each chorus. The song is a rhythmic tour de force of the old and the new, the foreign and the domest
canopy of Leon Russell's Superstar, the album's biggest production number and its most puzzling misstep. Vandross may be one of the finest contemporary voices, but even with Marcus Miller collaborating, he's far from the best producer or writer where his own albums are concerned. The stylistic pleasures and pains here almost cancel each other out. Still, the voice fingers on.

Jazz

Anthony Davis: Hemispheres

Composer/pianist Anthony Davis's new album continues his rigorous exploration of the territories that lie between jazz, contemporary concert music, and "world" music. In this case, the vehicle is a five-movement dance suite, "Hemispheres," commissioned by dancer Mollisa Fenley for a program at the Brooklyn Academy of Music.

The ten-piece ensemble that performs the work is fairly equally divided between classical- and jazz-oriented performers. The mix is appropriate, for the suite is Davis's most successful effort to blend elements from quite different disciplines. Movement 1, subtitled Étú at the Crossroads, serves, according to the composer, to establish "... the harmonic vocabulary for the suite." It is also a showcase for Davis's remarkable piano technique, most notable in some bombastic left-hand articulations. The "harmonic vocabulary," sounds very much like tone-row derivations, filled with flat-ninth interval leaps and half-tone simultaneities.

Movement 2 (Little Richard's New Wave), Movement 3 (Ifa: The Oracle — Étú the Trickster), and Movement 5 (Clonetics) evolve naturally out of Davis's interest in multileveled rhythmic densities. Like Don Ellis before him, he is fascinated with the manner in which jazz-based musicians deal with metric environments beyond the familiar 4/4, 3/4, and 6/8.

Davis, however, has found an inge
nous solution to metric improvisation. He avoids the familiar trap of overemphasizing the first beat of the bar (a vital landmark for most musicians when they play in unfamiliar meters) by overlaying several meters with a common ictus to maintain a connection. Movement 2, for example, combines 4/4 with 11/4 with a common quarter note. While the resulting patterns sound gloriously complex, the advantage to the improvising players is that they have the option of stressing either 11 or 4 and can forget about
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BACKBEAT Reviews

maintaining an intellectual awareness of where the bar lines recur. Trombonist George Lewis makes full use of this freedom, with a typically grunting, groaning, snorting, and soaring solo.

Movement 3 marries 5/4 and 7/4 with equally startling results. Davis further brightens the piece with a slow, almost mystical-sounding middle section featuring vibes and string fragments. Bass clarinetist J. D. Parran and trombonist Lewis dominate the final section.

Movement 5 uses a somewhat different method, overlapping long rhythm "rows" or "systems" that range from 30 to 50 beats in length. The results are a bit less successful, if only because the means are more interesting than the end; rather than become immersed in the momentum of the music, we are captivated by the way in which it is achieved.

Movement 4 (A Walk Through the Shadow) provides one more treatment of a lyrical piece that also appears on Davis's "Episteme" album. The reexamination is harmonically complex enough to sustain interest and provocative enough to stimulate quite different interpretations from the musicians. Despite the stolid pedal bass note that roots a good portion of it, Walk seems to blossom and grow in a series of passionate cycles.

While "Hemispheres" is clearly a compositional breakthrough for Davis into genuine originality, credit should also go to the musicians: Lewis fully justifies his growing reputation as the best of the post-bop trombonists; clarinetist Parran makes most of a few highlights; string players Shem Guibbory, Eugene Friesen, and Rick Rozie manage to sound like a full orchestra; and drummer Phenean akLaff, with perhaps the most difficult job of all, manages (among other things) to somehow find the proper mix point between 5/4 and 7/4.

DON HECKMAN

Michael Hashim, Jimmy Rowles: Peacocks

Bernard Brightman, producer Sush ST 227 (P.O. Box 380, Brooklyn, N.Y. 11215)

The first album by young alto saxophonist Michael Hashim, one of the most impressive members of the Widespread Jazz Orchestra, is of interest for two reasons.

One is that it gives us a fuller view of Hashim. With the Widespread Jazz Orchestra he has demonstrated his mastery of the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. 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Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. Hodges is still in the Johnny Hodges style without becoming merely an adept clone. 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JACO PASTORIUS
(Continued from page 77)

Backbeat: With less soloing and more ensemble passages, was the big band just a phase you went through, whereas now you feel like stretching out more?
Pastorius: I would say that, yeah.

Backbeat: Certain aspects of your big band writing, especially the frequent chromaticism, remind me of people like Gil Evans and Oliver Nelson.
Pastorius: [Laughing] Thank you!

Backbeat: Are they influences?
Pastorius: Definitely. I don't have their formal training, but [Miles Davis/Gil Evans'] "Porgy and Bess" was a big influence. I've never sat down and transcribed it; I've just listened.

Backbeat: But you do write down your arrangements.
Pastorius: Oh, sure. I write real well.

Backbeat: Lately you've been playing a lot more r&b, straight blues, and even some rock and roll. It seems as if you're cutting loose and doing things you couldn't do with Weather Report.

Pastorius: Exactly. But I've always played rhythm and blues. I consider myself one of the funkiest bass players. Nobody really knows that, because they figure that I'm a jazz player. And I do mix it up—I don't just sit there on an ostinato forever, you know. Now, I'm definitely getting to do more of what is Jaco Pastorius.

Backbeat: Obviously, you're a serious player and writer. But when I see you live, it seems like the audience cheers the loudest when you play fast or hit the distortion pedal. You said once that you never deliberately try to be flashy just to get people off. Still, it is what gets people off.

Pastorius: But I don't try to do it. I'm playing with the music. The only time I ever do something deliberately [flashy] is when people get rude, if a lot of kids are hollering something deliberately [flashy] is when they have to shut up.

Backbeat: Do you play to the audience?
Pastorius: Definitely. I play for the audience—that's why I'm there, obviously.

Backbeat: Right, but I'm looking at "for" and "to" as two different words. You don't go to great pains to talk to your audience, and you often turn your back to it. You usually just play; you don't always "perform.

Pastorius: Lots of times if I'm not looking at the audience, it's because I'm looking at the players to cue them. Even though this band is looser, we have lots of tight ensemble passages. Plus, I don't like to let the music wander.

Backbeat: I came into this interview expecting you to be an eccentric guy. I remember a press conference you gave at Warner Bros. a couple of years ago where you were really arrogant, giving a lot of flip answers. Do you think you're eccentric?
Pastorius: I'm very eccentric. But I am not arrogant.

HF

BACKBEAT REVIEWS
(Continued from page 82)

Mark Isham: Vapor Drawings
Steven Miller, producer
Windham Hill WH 1027

This seductive exercise in electronics marks a major step for instrumentalist Mark Isham and for Windham Hill records, a label that specialized in acoustic instrumental music until the release of this disc and one by amplified ensemble Shadowfax. Isham's "Vapor Drawings" is the more ambitious, blending synthesizers, trumpet, flugelhorn, soprano sax, piano, and electronic percussion into a dreamy hybrid.

Isham's career has included evocative group jazz with pianist Art Lande's Rubisa Patrol; stints with Van Morrison (during his rejuvenated, jazz-inflected late '70s works); an overlooked fusion trio called Group 87, which included two soon-to-be-Missing Persons; and diverse session work. "Vapor Drawings" bears only peripheral resemblance to those ventures, though in mood it does share the contemplative grace of the Lande and Morrison days.

Aided only by drummer Peter Van Hooke, another Morrison alumnus, Isham builds delicately layered backdrops on synthesizers and percussion, frequently employing bell-like voicings and cyclical melodic patterns that ripple beneath his hovering horn and reed lines. He reinforces those ethereal, harmonically suspended soundscapes from collapsing into an unevenly musical miasma is Isham's use of wide melodic intervals in his central themes. There is also a sense of humanism—particularly when his pure, magisterial tone on trumpet and flugelhorn comes through—that insures his electronics won't simply devolve into sonic clockworks.

Combining elements of jazz, classical, and pop, Isham's music doesn't fit comfortably into any one niche. With an appealing naturalism, Isham blends his traditional instruments and ideas with new, high-tech options—an achievement that makes his work worth watching.

SAM SUTHERLAND

MARCH 1984

85
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**Advertising Index**

<table>
<thead>
<tr>
<th>Page No.</th>
<th>Acoustic Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>ADC Div. BSR (USA) LTD.</td>
</tr>
<tr>
<td>21</td>
<td>Akai America, LTD.</td>
</tr>
<tr>
<td>82</td>
<td>Angel Records</td>
</tr>
<tr>
<td>33</td>
<td>Audio</td>
</tr>
<tr>
<td>10</td>
<td>Audio-Technica U.S. Inc.</td>
</tr>
<tr>
<td>23</td>
<td>Boston Acoustics</td>
</tr>
<tr>
<td>69</td>
<td>Carver Corp.</td>
</tr>
<tr>
<td>30</td>
<td>Concord Electronics</td>
</tr>
<tr>
<td>7</td>
<td>Crutchfield Corp.</td>
</tr>
<tr>
<td>73</td>
<td>Discwasher, Inc.</td>
</tr>
<tr>
<td>67</td>
<td>Illinois Audio</td>
</tr>
<tr>
<td>35</td>
<td>International Preview Society</td>
</tr>
<tr>
<td>74</td>
<td>Jensen Car Stereo</td>
</tr>
<tr>
<td>52</td>
<td>J&amp;K Music World</td>
</tr>
<tr>
<td>6</td>
<td>JVC Co. of America</td>
</tr>
<tr>
<td>51</td>
<td>Koss Corp.</td>
</tr>
<tr>
<td>81</td>
<td>Kyocera/Cybernet</td>
</tr>
<tr>
<td>8</td>
<td>LaBelle Camera &amp; Stereo</td>
</tr>
<tr>
<td>24</td>
<td>LAM Development</td>
</tr>
<tr>
<td>51</td>
<td>Magnepan Inc.</td>
</tr>
<tr>
<td>8</td>
<td>Maxell Corp.</td>
</tr>
<tr>
<td>26</td>
<td>McIntosh Laboratories</td>
</tr>
<tr>
<td>24</td>
<td>Nakamichi U.S.A. Inc.</td>
</tr>
<tr>
<td>28, 29</td>
<td>NEC Home Electronics, Inc.</td>
</tr>
<tr>
<td>41, 42</td>
<td>Pioneer Electronics, Inc.</td>
</tr>
<tr>
<td>27</td>
<td>RCA Consumer Electronics</td>
</tr>
<tr>
<td>72</td>
<td>Sansui Electronics Corp.</td>
</tr>
<tr>
<td>71</td>
<td>Signet</td>
</tr>
<tr>
<td>18</td>
<td>Stereo Corp. of America</td>
</tr>
<tr>
<td>26, 28, 29</td>
<td>TDK Electronics Corp.</td>
</tr>
<tr>
<td>54</td>
<td>Teac Corp. of America</td>
</tr>
<tr>
<td>56</td>
<td>Technics</td>
</tr>
<tr>
<td>17</td>
<td>U.S. Army Reserve</td>
</tr>
<tr>
<td>66</td>
<td>Wisconsin Discount</td>
</tr>
</tbody>
</table>

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