Flash! First DAT Decks • 40 Mini-Reviews: LPs, CDs, Cassettes, Videos

MAY 1987 • $2.50 USA • $3.50 CANADA

SONY’S SUPER CAR TUNER/CD PLAYER

AKAI’S HI-FI VCR WITH STEREO AMP

MISSION’S SOUPED UP HOME CD PLAYER

SPECIAL! CAR STEREO ’87

First Look at Newest Models
5 Key Steps In Buying a System
Lab/Road Tests
Detroit’s “Big 3” Get Serious
How to Foil Car Stereo Thieves
Not Evolutionary

Pioneer's Revolutionary C-90/M-90 Elite High-Fidelity Components.

Audiophiles, take note: The preamp and amplifier you've been waiting for are finally here.

Introducing the Pioneer Elite Hi-Fi C-90 Preamp and M-90 Power Amplifier. Together, they combine the finest in both audio and video to retrieve every detail and nuance found in your cherished records, tapes, compact discs, LaserVision™ discs and other software. Imagine a soundstage spread throughout your entire listening room! Stunning, transparent, three-dimensional music, the likes of which you've never heard, apart from a live performance.

We paid fantastic attention to detail to gain this level of musical truth. One example: the C-90 volume control is a motorized, high precision rotary potentiometer. This permitted us to create the world's first high-end preamp with a no-compromise hand-held "SR" remote-control unit.

The C-90 features three separate power transformers—two to power left and right audio channels for vanishingly low crosstalk, and a third transformer to drive the preamp's unique video capabilities, relays, display and microprocessor. All switching functions are accomplished by electronic relays. Thus the signal paths are as short as possible, improving signal-to-noise ratio and channel separation. Anti-vibration measures taken to further the C-90's sonic excellence include a solid aluminum volume control knob, polycarbonate chassis feet, and rubber-cradled PC boards. Soft copper-plated screws insure a snug fit of chassis, transformers, transistors, and help to dampen vibration.

The C-90 Preamp readies you for the video revolution, with six video inputs, a built-in video enhancer, and two-buss switching (separate "Record" and "View" selectors). The C-90's unique system remote-control unit features volume adjustment, input source selection, and control of audio and video input devices such as Pioneer's "SR" compatible VCRs, CDs, LaserVision players and cassette decks.

The M-90 is a superb high-power stereo amplifier, utilizing dual-mono construction. It is conservatively rated at 200 W/CH into 8 ohms and delivers 800 W/CH of dynamic power at 2 ohms. The wide dynamic range of digital sources can now be reproduced effortlessly, with any loudspeakers. The M-90's high current capacity of 47 amps can handle the challenge of the most complex speaker loads. To further enhance S/N ratio and channel separation, relay-operated electronic switches and a long shaft volume control keep the length of signal paths down to a minimum. Why include a high quality volume control on a power amp? Simple. To pursue the straight-wire-with-gain philosophy when using a CD player connected directly. Pure sound, redefined.

The exquisite finish of the M-90 and C-90 reflects their quality. Elegant rosewood side panels and front panels with a deep hand-brushed lacquer finish emphasize the care of craftsmanship we've lavished on these two components. The Pioneer C-90 Preamp and M-90 Power Amp. Evolutionary? Hardly. Revolutionary? Most definitely.

For your nearest Pioneer Elite Hi-Fi dealer, phone 1-800-421-1404.

Revolutionary.

PIONEER

CATCH THE SPIRIT OF A TRUE PIONEER.
STereo Demands The Real Sound Of America's Best-Selling Speakers

Realistic® brand speakers from Radio Shack are the choice of music lovers who know uncompromised sound when they hear it... and solid-value craftsmanship when they see it. From the mighty Mach Two® system to our widely acclaimed Minimus® series, each and every Realistic speaker system is engineered and manufactured to demanding standards. And 13 models, including two of our lowest priced extension speakers, feature a genuine walnut veneer finish, not vinyl. For the real sound of stereo, millions choose Realistic.

Exclusively at Radio Shack

As seen on TV
Test Reports

20 Mission PCM-4000 Compact Disc player
21 Acoustic Research A-06 integrated amplifier
23 Akai VS-525U HQ VHS Hi-Fi videocassette recorder

Audio & Video

SPECIAL REPORT: CAR STEREO
35 Five Simple Steps to Highway Hi-Fi
by Gordon Brockhouse
A complete guide to buying a car stereo system

46 Road Warriors 1987
by Jay C. Taylor
The latest car stereo gear, as seen at WCES

51 Two for the Road: Lab/Road Tests
Sony CDX-R88R car tuner/CD-player/amplifier
Zapco S-80 car power amplifier

Music

CLASSICAL
56 Memories of His Master's Voice
by Edward E. Swenson
An interview with the late Ronald Kinloch Anderson

POPULAR/BACKBEAT
70 Mini-a-tour
by High Fidelity's pop and jazz critics
An entire Backbeat section of mini-reviews

Departments

4 Front Lines Sense and nonsense in the DAT controversy
8 Letters
11 Currents Three supreme Motown hi-fi systems
13 Bits & Pieces First DAT specs received from Sony
14 Crosstalk Making the basement a better place to listen in: MM and MC switch
16 Tape Tracks Understanding level vs. frequency for better recordings
55 Medley Live vs. studio, via Fairport Convention; Birthday greetings
60 The CD Spread Schubert, Rachmaninoff, Walton, Bartók, Tchaikovsky, Debussy, and more...
62 Classical Reviews Bellini's Capuleti; Berg and Carter concertos; Roussel, Elgar, and Sibelius symphonies
80 Reader-Action Page
80 Advertising Index
LOOKING FOR THE JOLLY ROGER

Hom taping is a hot topic these days in the music business. The Recording Industry Association of America (RIAA) estimates that its members lose $1.5 billion annually (in revenue, not profit) to home taping. This figure presumably is derived from the 1983 study commissioned by the RIAA that purports to demonstrate lost sales equivalent to $25 million albums per year. This report stimulated the Electronic Industries Association (EIA) to do a survey that arrives at more or less the opposite conclusion: that home taping improves record sales.

If my own practices are any guide, the truth is smack in the middle. I can’t remember buying a record mainly because I wanted to tape it, but I don’t copy other people’s records, either. Most people I know fall into this category. But what about people who do tape their friends’ records? In how many cases would they buy the same record if they couldn’t make copies? The RIAA claims about 60 percent, which seems implausibly high to me. Something that’s worth two or three dollars to you (the cost of a blank cassette) is not necessarily worth six or eight or 15 (typical retail prices for records and CDs). After all, there has to be some economic incentive behind illegal copying.

Which brings us to the question of why the record industry has chosen to pick on DAT. The notion that people too cheap to buy their own records are going to snap up $1,500 tape decks and $10 blank cassettes to dub recordings they can get in a store for $4 to $15 and play on machines that sell for less than $200 is a little hard to swallow. The main argument levied against the new medium is that it will enable consumers to make nearly perfect copies even of CDs and greatly reduce the generational loss of fidelity that plagues analog recording. The fear, I suppose, is that one person will buy a record that will then be copied by another, whose tape will then be dubbed by yet another, and so on until eventually a hit record will be one that sells five copies in every major city.

Although DAT is more amenable to this sort of serial duplication than is the analog cassette, there still are limits. One is that no DAT deck will record at the 44.1-kHz sampling rate used for Compact Discs, making direct digital duplication of them impossible without a sampling-rate converter. More important, however, is the fact that DAT machines can detect whether a digital input signal comes from a CD, in which case they will not record. As a result, all copies of prerecorded material will have to be through the DAT decks’ analog inputs. A more mundane, but perhaps more significant, safeguard is that making DAT-to-DAT copies will require two machines—costly if you buy a second one, inconvenient if you don’t.

I don’t believe that home taping is costing the record industry anything close to the $1.5 billion it claims, but we all should support reasonable efforts to reduce the amount of genuine copyright violation. The kind of crude, sledgehammer analog copying now on the docket in Congress is far from reasonable, however. It will degrade the fidelity of protected recordings and seriously compromise the legitimate interests of honest consumers while providing little or no benefit to copyright holders. A better approach would be to ban dual-well DAT decks (nobodies is making one, yet, but know how these things go) and to require that DAT machines be rendered incapable of making direct digital dubs of commercial digital recordings, such as CDs. In addition, the RIAA, preferably with the support of the EIA, should embark on a consumer education campaign, carrying the message that copying commercial recordings you didn’t buy is the moral equivalent of shoplifting. The computer software industry has such a program, which most observers feel has been effective. Spending money in that way will do everyone a lot more good than wasting it on lobbyists in Washington.
Most speaker designers haven’t changed their position in 30 years.

Presenting the dbx Soundfield series:
Reality Imaging and the end of the stereo “sweet spot.”

For 30 years, speaker designers have believed that the only way to achieve balanced stereo is to sit directly between and in front of both speakers. If you move out of this “sweet spot,” the stereo image collapses and the frequency response is anything but flat.

At dbx, we took a revolutionary approach and developed a new speaker design that achieves stereo balance and frequency response so consistent from any listening position, so close to the real thing, we needed a new name to describe the experience: Reality Imaging. Reality Imaging brings you right up to the stage. It’s not only the sound, but the actual spatial reality—the feeling of being there. And it’s an image that doesn’t collapse if you move around.

Not only can you hear it, you can see it.

Ask your dbx dealer to demonstrate with a sound analyzer (such as the dbx 1410) how consistently the flat and smooth response—and Reality Imaging—are maintained by dbx Soundfield speakers at every point in the room. Then ask him to do the same with any other speaker at any price. You’re in for a shock. And we seriously suspect you’ll be changing your position on stereo speakers for good.

For the location of the dbx speaker dealer nearest you, call us directly at (617) 984-3210.® A division of BSR North America Ltd. ©1986 dbx, 71 Chapel Street, Newton, MA 02158.
A car stereo designed for people with ears. And something between them.

Odd as it may seem, most people judge how a car stereo sounds by judging how it looks. Is it loaded with flashing lights? Littered with impressive buttons?

Then it must be a sterling example of modern technology. This reaction, while somewhat understandable, never ceases to amaze the 326 car stereo engineers who work for Blaupunkt in Hildesheim, West Germany.

They prefer to take a more intelligent approach.

When designing car stereos, don't forget the car.

Blaupunkt might be the only car stereo company that thoroughly understands this simple fact:

A car is a horrible place in which to reproduce true high-fidelity sound.

It requires an incredible effort to overcome challenges like road noise and vibration. Shrihl glass surfaces. Cushiony seats. Bad reception. Temperature variations. And the obvious principle that a driver has better things to do than to fiddle with a confusing array of buttons and knobs.

Keep this in mind, and it's easy to appreciate the difference between Blaupunkt and other leading brands.

If we don't engineer it, we don't sell it.

While other car stereo makers are content to purchase tape mechanisms, amplifiers, tuners, speaker components, and other vital equipment from outside sources, Blaupunkt engineers do almost everything from scratch.

To pack more technology into a smaller space, Blaupunkt engineers design their very own circuitry Controls are designed to ensure ease of operation even while wearing racing gloves.

To eliminate wow and flutter in cassette mechanisms, dynamically-balanced heavy brass flywheels are honed to within tolerances of .005 inch.

To make systems easier to operate, controls are arranged in logical fashion. So drivers can operate them by touch, without taking their eyes off the road.


Few manufacturers go to all this trouble. With every feature. On every product.

Which makes it all the more remarkable that the design stage is only the first step in making a Blaupunkt.

Now comes the hard part.

Tuners are taken from mountain ranges to bustling urban areas to measure radio reception.

Antennas spend weeks in salt baths in order to measure rust resistance.

Literally hundreds of tests are conducted.

To ensure performance at 160°F above zero.

To ensure performance at 5°F below zero. To ensure performance after 24 hours
The mountains of Europe are just one of the obstacles Blaupunkt engineers have had to overcome to improve radio reception.

of punishing vibrations.

Last year alone, Blaupunkt engineers spent hundreds of thousands of hours testing.

And once a new model is approved for production, you might imagine that Blaupunkt

to up to 400 additional tests.

**Why do we do it?**

If you're a rational person, you almost begin to wonder why on earth Blaupunkt goes to such incredible lengths.

Perhaps because customers

brings you up-to-the-minute traffic reports in many major U.S. cities. And it's a standard feature in most new Blaupunkt receivers.

A thank you.

And an invitation.

While we appreciate this opportunity to explain how well Blaupunkt are made, we are regretfully unable to demonstrate how good they sound.

For that, we invite you to visit the independent car stereo specialist near you who sells, services, and installs our products.

Check your Yellow Pages under "Automobile Radios & Stereo Systems."

Or call 1-800-237-7999, and we'll be happy to direct you.

Because frankly, while you may be surprised by how much goes into a Blaupunkt, you'll be even more amazed by what comes out.

---

Standard in VW and BMW (Europe), and worldwide in Ferrari, Porsche, and Audi, Blaupunkt engineers might relax a bit.

Wrong.

Every individual component is tested before assembly.

Then tested again during assembly.

Then the finished product is placed on a computer stand and tested before shipping.

But even that isn't enough.

Spot checks at random during assembly subject units

have come to expect.

Customers like you.

And customers like Lotus, Porsche, Audi, Rolls-Royce, Aston-Martin. Ferrari. Just to name a few.

But a more important reason is simply because that's the way they do things over in Hildesheim, West Germany.

Since 1932, when Blaupunkt introduced the first car radio to Europe, Blaupunkt has been obsessed with automotive sound.

It's hard to argue with the results.

Over the years, Blaupunkt has earned hundreds of patents in the field of automotive sound.

Example: ARI, a remarkable technology that

Why do Blaupunkt products perform so superbly? They're designed to work together. We engineer everything ourselves. Most manufacturers don't.

---
MORE DSP NOISE

I, Too, Hear Hiss from the Yamaha DSP-1

I recently bought a Yamaha DSP-1 signal processor, largely because of your September 1986 issue and have determined that it is not dependent on volume level. The hiss is audible to me during quiet passages of recordings. Therefore, your answer to R. Chris Pooser (“Letters,” February) that he had his speakers turned up too loud is debatable. That you are unable to hear the hiss in “normal use” implies that audio discrimination is suspect or that your DSP-1 is more nearly perfect than ours. If the latter is the case, will Yamaha be able to correct the problem?

Bob Bruton
Torrance, Calif.

I read the first letter to the editor in your February issue and discovered that it was almost exactly the same as the one I had been planning to write. I, too, bought a DSP-1 based on your comments and those of other magazines and agree that it is a good unit. However, from what I could determine from magazine reports, it is supposed to be as noise-free as a CD player, and $900 is a lot to pay for something that isn’t. Your February issue, in coincidence or whatever, has a double-page ad stating the wonders of the unit and also implying that it is of CD quality. I am very skeptical of magazine reports, as I believe that since all these manufacturers run ads in the magazines there are never going to be really truthful reviews of their products. I think the DSP-1 is the last thing I will ever buy based on the opinion of any magazine except maybe Consumer Reports.

Robert L. Fokkhausen
Enumclaw, Wash.

Editor Michael Riggs replies: Our answer to Mr. Pooser seems not to have been very clear. The point is not that the overall volume should be low but that the level of the ambience channels should be substantially lower than that of the main stereo channels. This is true of any surround processor and is the reason you typically need only a tenth to a quarter as much power for the effects channels as you need for the main channels. The best way to achieve the necessary attenuation is to turn down the level controls on the amplifiers feeding the ambience speakers, which will reduce the noise from the processing circuitry along with the signal, and use the volume control on the DSP-1’s handset only to fine-tune the resulting balance. If you do this, you should hear no noise from the DSP-1 under normal listening conditions, except that which is present in the program material itself.

This was our experience, which we
have confirmed with others who have used the unit.

Again, we did not try to cover up any flaw in the
design. The signal-to-noise ratios for all
channels are listed in the data accompanying the rev-
Review. The figures for the main channels are superb by
any standard, and though the result for the ambient
cross channels is about 25 dB poorer, we did not find
this to be a practical limitation in ordinary use. Fi-
ally, the review does state that the instruction man-
ual is inadequate.

I never know quite what to say when someone
accuses us of being biased by advertising: How do
you prove that you’re not on the take? We do not
sweeten the reviews of advertisers’ products, and we
regularly report on products manufactured by com-
ppanies that do not advertise at all. In fact, the editor
ers do not know who will be advertising in an issue
when they are working on it. When we find problems,
we point them out, but most of today’s equip-
ment is pretty good. I do not, by the way, consider
Consumer Reports a reliable guide to the perform-
ance of audio and video equipment or, for that
matter, much of anything else. (Ask a photography
buff what he thinks of its evaluations of photo gear.)
Its rating system is at best too simple-minded to be
genuinely useful and at worst rather misleading.

CD OBsolete?
Isn’t it true that DAT has already rendered the Compact Disc obsolete as a
music reproduction medium? DAT offers the convenience of the cassette and the fidelity
of the Compact Disc with the great advantage over the CD of enabling recording as
well as playback. So why is DAT being de-
nied to American consumers? And why aren’t American audio publications taking a
more aggressive stance in favor of DAT, which is clearly and unquestionably superior to the CD from the consumer’s point of view? Could it possibly be because all of the
advertisers in audio publications have invested very heavily in the Compact Disc?

D. A. Ward
Lubbock, Texas

DAT is not being “denied” to American consum-
ers—at least, not yet. The system was just intro-
duced in Japan in March, and it always takes at
least a few months for new stuff to make its way to
the U.S. market. We have taken a strong stand
against the pending legislation that would cripple
DAT machines imported into this country (see
“Front Lines,” April and May, and “Currents,”
April). On the other hand, we do not think that
DAT makes CD obsolete. The Compact Disc still
provides greater durability (CDs don’t wear out)
and faster access than DAT. The other drawback to
DAT, at least at present, is that no high-speed du-
plicators are available, which makes it impractical as a medium for prerecorded music. This situation
undoubtedly will change, but for the moment, that’s
the way it is. We see DAT complementing CD in
much the way that the cassette complemented the
LP. Our position on DAT is independent of what
our advertisers might happen to think about it, but
in any case, the companies selling DAT recorders
will be the same ones who make CD players.—Ed.

CD Marketing Madness

I am baffled by DG and London’s system of
marketing CDs. DG started a Mahler cycle with Claudio Abbado and then dropped it in favor
of starring new cycles with Giuseppe Sinopoli and Leonard Bernstein. They issued two items from Bernstein’s Beethoven cycle with the Vienna Philharmonic (Sym-
phonies Nos. 5 and 6) on CD, but no more. Worst of all, London has not made Solti’s
Beethoven cycle available on CD, even though there is obviously a large market for
Solti and the CSO. Can you tell me if I’ll ever be able to enjoy the complete Abbado/Mah-
ler and Solti/Beethoven cycles on CD?

Paul Jackson
Fountain Hills, Ariz.

We understand that the Beethoven Ninth from
Bernstein and the Vienna Philharmonic is due to
come out soon on a DG Compact Disc (it has already
been released in Japan). The Solti/Chicago Beetho-
 ven cycle is a superior one, and we second your mo-
tion that London release it on CD. As for Abbado’s
Mahler Symphonies Nos. 1, 3, 4, and 7 are avail-
able on CD; let’s be recorded are Nos. 8 and 9 and
Das Lied von der Erde. We are told by DG’s
New York office that we can expect to see the remaining Mahler Symphonies from Abbado (i.e., Nos. 2, 5, and 6) resound on CD sometime in 1988.—Ed.

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

Our new UX tapes deliver
higher highs, lower lows and
wider dynamic range.

If you’re going to listen to music at all, you may as well get it all. No matter how
high or low, how loud or soft. Captured so faithfully that trying one of these new
tapes at least once is something you owe
yourself. And your music.

Each of these four new UX tapes re-
prest the kind of advancement of music replication you’ve come to expect from
Sony. UX-ES, for instance, offers the best
frequency response of any Type II tape
we’ve ever formulated. Yet UX-PRO actually
goes one better with a ceramic tape guide
that yields the most incredibly quiet tape
housing Sony has ever produced.

Sony UX tapes. Now when a musician
really extends himself, so will your tape.

Sony
The One and Only

© 1986 Sony Corporation of America Sony and The One and Only are trade-
marks of Sony
There's a world of difference between driving a car hard and a car that's hard to drive. Imagine entering this sweep fumbling for the right gear because of a notchy shiftgate. That's what using the typical car stereo is like. You'd think it was designed by people who take the bus to work.

In dramatic contrast, Denon's human engineering is "about the best I have yet run across."* To earn such praise, we grouped the controls by function, gave them tone confirmation, and made them identifiable by touch. Our face plates look so much like original equipment, they can even be made to match the dashboard lights (optional). And our removable, theft-proof DCR-5420A protects both your car and your car stereo.

Then, to make high fidelity even more road worthy, we isolated our Non-NFB Class A amplifier from ignition noise. We improved our quartz synthesis tuning with the Denon Optimum Reception System. And built an all new shock-resistant cassette mechanism.

You see, for Denon the ultimate test bench has four wheels.

DENON

*Finally, car audio as good as your car.

Denon Amer. Inc., 27 Law Drive, Fairfield, N.J. 07004
A GROWING NUMBER OF AMERICAN CARS CAN be ordered with sophisticated sound systems that legitimately challenge some of the finest components available from aftermarket suppliers. Chrysler this year joins General Motors and Ford in offering special factory-installed sound systems developed jointly with a major American loudspeaker manufacturer.

GM’s Delco/Bose system, which premiered in the fall of 1982, was the first effort by a domestic car maker to market a high-end sound system in an attempt to capture some of the lucrative business lost to the aftermarket (and sell more cars, too). Using a Delco head unit, full-range Bose drivers, and amplifier modules located within the speaker enclosures, the system is tuned to the acoustics of the car’s interior space and the position of the listeners by a combination of active equalization and strategic speaker placement. The goals are “acoustically optimized sound” and a proper stereo image for any seat in the car. Initially available as an option only in some of the General’s luxo-models, the offering has been extended to the new Pontiac Bonneville and the full lineup of Chevrolet Camaros. In the $50,000 Cadillac Allanté, the system is standard (as well it should be).

The Bose drivers in the 1987 Cadillac Seville, Eldorado, and Allanté and Chevrolet Camaros employ neodymium in a recently developed high-energy magnetic material. These new “wafer” drivers, about one quarter the weight of the more conventional units they replace, are claimed to have more acoustic output for their size and weight than any other loudspeaker available. The motor structure fits within the shallow, full-range cone, resulting in an overall thickness of 32mm, thus lending more flexibility to speaker placement.

Completely new for 1987 is the Delco Compact Disc player, offered as a dealer-installed option on any Delco system. The unit includes a switchable compression circuit that squeezes very soft and very loud passages into a more desirable range for the high-ambient-noise environment of a moving car. It is designed to be mounted below the dash on a pedestal that contains a six-disc storage compartment.

The Ford/JBL Audio System, which debuted in the 1986 Lincoln Continental, is now available in the 1987 Lincoln Town Car (you know, the really big one) and the 1988 Lincoln Mark VII. Ford’s top head unit is used in combination with ten (in the Mark VII) or 12 strategically placed JBL component drivers and a four-channel JBL amplifier rated at 140 watts (21.5 dBW) total power. Like the Delco/Bose system, equalization circuits designed for each body style are used to maintain proper frequency balance and imaging. Bass response is said to reach as low as 25 Hz, and Selective Frequency

THE FORD/JBL AUDIO SYSTEM HAS JBL COMPONENT DRIVERS, A FOUR-CHANNEL POWER AMP, AND (IN THE LINCOLN TOWN CAR) AN OPTIONAL FACTORY-INSTALLED CD PLAYER.
Needle wear... By the time you hear it, your records are ruined.

With record companies expected to reissue less than 10% of existing LPs, it's more important than ever to replace worn needles and protect your valuable record collection.

If you haven't replaced your needle in the last year, there's no better way of protecting your valuable record collection than by replacing it with a top quality Shure V15 V cartridge or stylus.

Save up to $75.00 on the world’s best LP life insurance.

Purchase a V15 V-MR cartridge and earn a $25.00 cash back rebate. A V15 V-B or V15 V-Ph qualifies for a $20.00 rebate. Plus, you receive $5.00 in coupons good on purchases of Shure replacement needles.

To receive your rebate and coupons, send 1) dated sales receipt (not returnable) 2) complete outer carton 3) completed form to: Shure LP Life Insurance 222 Hartrey Avenue Evanston, IL 60202-3696

NOTE: OFFER GOOD ONLY ON PURCHASES MADE IN THE U.S.A.

Fading is said to keep the woofers operating at controlled levels when the system is faded front-to-rear. Additional circuitry monitors speaker-cone excursions at high listening levels to forestall impending amplifier overload and the accompanying distortion. A new head unit will be available this fall with improved ergonomics, electronic volume control (with remote capability), and stereo AM reception.

A CD player is offered as a factory-installed option on Town Cars equipped with the Ford/JBL system, a first for the domestic car industry. The player is installed below the radio and mounted to minimize its sensitivity to shock and vibration.

At this writing, Ford is test-marketing a built-in VHF television sound reception in one of its regular "premium" head units. We know of at least one other manufacturer, Proton, that includes this feature in a car radio. The prospect of television sound in the car is more than passing interest to TV advertisers.

Not to be outdone by its two larger rivals, Chrysler called on the know-how of Infinity Systems, another prestigious American loudspeaker manufacturer, in designing an optional system matched to the acoustic characteristics of three of the company's 1987 models: The Chrysler New Yorker and the virtual body-type twins, the Chrysler LeBaron GT and Dodge Lancer. The system is bi-amplified, with crossovers dividing the signals among the four Infinity bass/midrange drivers and four dome tweeters. The tweeters are driven by the head unit's built-in amplifier, while the bass/midrange units are driven by individual self-contained amplifier modules. As in the Ford and GM systems, electronic equalization is used to achieve balanced response and effective imaging for each body style. Chrysler plans to make the system available in additional models and is investigating the possibility of offering a CD player.

The Big Three's foray into high-end autosound systems is a significant challenge to the aftermarket suppliers. Designing a system around a known acoustical space, one in which the listening positions are essentially fixed, is an advantage for the auto makers. Expect to see more aftermarket systems and components designed with the acoustics of particular cars (or other vehicles) in mind.

LENSMANSHIP

MINOLTA HAS APPLIED ITS EXPERTISE IN LENSES TO ITS NEW MASTER SERIES C-3300 VHS-C camcorder. The Multi-Dimensional Autofocus System found in the C-3300 comprises a compact 6X power-zoom lens and a phase detection system based on the one used in the company's 35mm autofocus SLR cameras. Unlike a conventional autofocus system, which gauges distance from the reflections of transmitted infrared beams, Minolta relies on a through-the-lens (TTL) technique: The image formed by the camera's lens is used to determine the focus. Objects can be focused from the lens surface to infinity, and the system can automatically switch from a narrow to a wide focus area to track a moving subject. The 1/4-inch CCD image sensor automatically calculates the proper exposure by measuring the light levels of both the entire image and the central portion of the image. And the automatic white-balance system is claimed to adjust for fluorescent as well as normal lighting. The settings of both the exposure and white-balance can be locked, allowing creative shots under a different set of conditions.

Two HQ techniques are used to improve recording quality: extended white-clipping level (for sharp edges) and detail enhancement. The electronic viewfinder displays short "messages" rather than indicator lights to supply camera status information.

The remarkable thing about Minolta's AF system is its ability to work through converter lenses. There are two available for the C-3300: the Tele-Converter L1-3300, which increases maximum zoom from 54mm to 81mm (equivalent to 450mm on a 35mm camera) and the wide-angle LW-3300, which sets the zoom lens to its widest position and provides a 5.85mm focal length (32mm on a 35mm camera). Both converters require Accessory Base AB-3300 for attachment.

The C-3300 is otherwise fully featured, with VCR transport controls, audio and video inputs and outputs, and supplied accessories, including a one-hour rechargeable battery, an RF adapter, a full-size VHS cassette adapter, and a shoulder strap. Prices were not announced as of this writing. Minolta plans to offer both a full-size VHS and an 8mm camcorder that incorporate a similar optical system. For more information, contact Minolta Corp., 101 Williams Dr., Rausney, N.J. 07446.
**DAT Flash.** Major Japanese audio manufacturers have started announcing their first DAT machines. Although the product introductions are, so far, for the Japanese market only, they have stimulated a flurry of protectionism-inspired anti-DAT lobbying in Congress and a misleading and tasteless protest against the system on the Grammy awards show.

The first detailed specs we've received for any of these units is for Sony's DTC-1000ES ($200,000, about $1,333 at 150 yen to the dollar), which probably will not appear in the U.S. with precisely the same features or model number. Measuring 17½ by 4 by 16½ inches and weighing 26½ pounds, the drawer-loading unit is surprisingly bulky considering the small cassette it uses and the ultraminiature prototypes I've seen at Sony headquarters. But it is packed with circuitry, as it uses separate analog-to-digital and digital-to-analog converters for each channel, with the latter driven by a four-times oversampling digital filter like the one used in Sony CD players. Sampling rate for line-input recording is 48 kHz, but the deck will record with 48- or 32-kHz sampling rates when tapping through its direct-digital-dubbing input (a jack that probably will be deleted from any U.S. model). Playback—but not recording—of tapes made with a 44.1 kHz sampling rate is also possible.

As will most other DAT machines, the DTC-1000ES has many of the amenities familiar to users of analog cassette decks. Included are music-scan, blank-search, and external-timer functions. The cue/ review feature will not produce a high-pitched squeal as on analog decks. Instead, the music will pass at double its original tempo but at normal pitch. And, in a feature new to home audio taping, the deck will allow the addition of automatic cueing points to an already recorded tape.

Sony's specs are just about what you'd expect for a 16-bit digital tape recorder: frequency response from 2 Hz to 22 kHz, ±0.5 dB, harmonic distortion of 0.005 percent, wow and flutter below measurable limits, signal-to-noise ratio of more than 92 dB, and dynamic range of 90 dB. Sony also announced blank tape in 46-, 60-, 90-, and 120-minute lengths priced from $1,200 to $2,000 ($8 to $13.33) and a real-time software duplication system capable of making 50 copies simultaneously. A high-speed duplicator using contact printing "has passed the prototype stage and is now on its way to commercialization," says Sony.

**Digital Disc Recording.** After a couple of years delay, Compusonics (Palo Alto, Calif.) has released its home digital-disc recorder, the DSP-1000. It records on a nonerasable computer optical disc similar to, but incompatible with, a Compact Disc (it's larger and comes in a protective caddy). The unit's principal technical claim to fame is its use of digital data compression to increase its recording time without sacrificing audio quality. In the normal stereo recording mode, called CSX4, storage capacity is extended about four times over the noncompressed mode, for a maximum recording time of about an hour. In the CSX8 mode, bandwidth drops to 6 kHz, but more than three hours of mono recording is possible.

Compusonics actually calls the DSP-1000 a digital audio computer, and there are enough microcomputer, digital-memory, and other integrated circuits inside to fully stock several personal computers, as well as an array of digital input/output connections. This processing power is necessary not only for the data compression but also for the unit's extensive built-in editing capabilities. Unfortunately, the cost of the system ($6,995 for the DSP-1000, $89 at present for a blank optical disc) means that it will probably remain a technical curiosity, even for the semipro market, where I think the DSP-1000 would find its best home.

**Gold-Plated CDs.** Mobile Fidelity has issued its first Ultradisc (MFCD-JS-1, a jazz sampler), a CD with a reflective layer of 24-karat gold instead of the otherwise universally used aluminum. The company says that the gold-plating process, developed jointly by Mobile Fidelity and an unnamed Japanese CD manufacturer, "produces a smoother, flatter, and consistently cleaner metallic disc.... Information is retrieved consistently, clearly, and accurately with minimal error correction required."

Well, the error correction may be "minimal," but the error rate I found for my virgin copy, although very good, is not the lowest I've encountered, and it is definitely not zero. After ten plays, the average number of error corrections performed per second was 5.62. The lowest block-error correction rate I've found for a disc of comparable playing time was 2.27 for a conventional CBS/Sony pressing of Bruckner's Symphony No. 3 (32DC-487, available only in Japan). Note, however, that these figures tabulate corrections and not interpolations, for which the player has to calculate missing data. With both these discs, and indeed with more than 90 percent of the nearly 650 clean and unscratched CDs I've tested, the interpolation rate is zero. All the data that's supposed to be there is decoded absolutely correctly. In other words, even with ordinary CDs, there is rarely any refining by the interpolation circuitry, contrary to the paranoid fears of some audiophiles.

Another claim for the Ultradisc is less easily checked. Mobile Fidelity says that gold's "noncorrosive" (more correctly: noncorroding) nature will prolong the discs' lives. It is possible that in extremely hostile storage environments an aluminum reflective coating may degrade if there are holes in the lacquer layer protecting it. But recounts of error rates for aluminum-coated discs I acquired at the dawn of the CD era (late 1982) have shown no increase, despite their four years of storage in an environment not famed for its freedom from airborne contamination: New York City. A golden Ultradisc may look luxurious and have a low error rate, but I, for one, am not going to worry about disc corrosion.

**TIDBITS**

By David Ranada

BY

MAY 1987
BASEMENT LISTENING ROOM
I'M THINKING ABOUT CONVERTING ALL OR PART OF MY basement into a listening room. Do you have any suggestions as to how to produce the best possible acoustic environment?

Arnold Spranger
Pasadena, Calif.

A room's dimensions, the reflective/absorptive characteristics of its surfaces and contents, and the listener's and the speakers' locations in relation to adjacent room boundaries will all have a significant effect on the quality of the sound reaching a listener's ears. This multitude of variables demands a certain amount of trial and error before things fall into place acoustically.

With respect to room dimensions, James Moir, in his out-of-print book "High Quality Sound Reproduction," suggests some preferred dimensional ratios that minimize standing-wave problems. For a smallish room, say 1,000 cubic feet or so, his suggested height to width to length ratios are 1:1.25:1.6; for a medium room, 1:1.6:2.5; and for a large room, 1:2.5:3.2.

If you have the choice, there are two reasons to go for the largest room you can manage. A small room provides the least acoustic reinforcement of the bass (low-frequency reverb time is very short), meaning that your speakers will have to be driven harder to produce the same perceived level of bass as they could in a larger room. In addition, a large room allows a listener and the speakers to be reasonably distant from adjacent walls and from each other, a relationship that considerably enhances stereo imaging and naturalness. In that connection, it's almost always a good idea to minimize acoustic reflections in the speakers' immediate environment by the use of rugs, wall hangings, and the like. Ideally, the ceiling should be as high as practical and no room surfaces should be parallel to each other, but these are objectives impossible to achieve in a basement.

Here are some additional miscellaneous acoustic considerations: Interior dividing walls constructed of paneling nailed to studs will be fairly transparent to bass frequencies. This may cause the bass sound waves to behave as though they were being propagated into a much larger room, if they are not absorbed by plywood-panel resonances. If your basement room has cinder-block walls, you may get substantially stronger bass from a given set of speakers than you would in a frame-construction room with normal wall flexure. The typical basement tile floor is very reflective, so the sound will benefit from the use of rugs between the speakers and the primary listening area. Acoustic tile or, better yet, absorptive foam on the ceiling may also help reduce early-reflection coloration. Good luck!

IMPEEDANCE RISE
I'VE ALWAYS WONDERED WHY A SPEAKER'S IMPEDANCE varies with frequency. Is there an electrical or physical reason for this?

Kenneth McClain
Concord, Mass.

Both. Like any other coil of wire, the voice coil of a speaker has the electrical property of inductance, and the impedance of any inductance rises with frequency. Thus, the impedance of a speaker system usually starts going up somewhere around 400 Hz, unless the designer has taken steps to prevent it. There is another rise—to perhaps five times the nominal rated impedance—at the woofer's in-box resonant frequency. This comes about because of a phenomenon called "back voltage." When a woofer cone is getting a signal, the rapid shuffling movement of the voice coil in the magnetic gap causes it to act as a generator producing a voltage in opposition to the driving voltage. This counter-electromotive force produces an electrical effect that is identical to that caused by an increase of voice-coil impedance. (If the speaker voice coil is physically prevented from moving, there is no counter-EMF generated and no impedance rise.) When looking at impedance curves, keep in mind that an impedance rise at certain frequencies is not synonymous with an increase in output at those points.

PHONO-INPUT DAMAGE
THERE'S A SWITCH ON MY RECEIVER THAT SETS UP ITS single phono input for either a moving-coil (MC) or moving-magnet (MM) phono cartridge. Can I damage anything by accidentally playing an MC cartridge in the MM position, or vice versa?

Charles Wentworth
Pasadena, Calif.

In general, moving-coil cartridges have about one-tenth the output of moving-magnet types. This means that the preamplifier section must provide at least ten times more gain for an MC cartridge to achieve the same signal output at the same volume control setting. If an MC cartridge is fed to an MM input, the resulting signal will be weak and noisy because of insufficient amplification. Conversely, if an MM cartridge is fed to an MC input, the signal will be loud and (possibly) distorted because of preamp overload and impedance mismatch. In either case, nothing will be damaged except your sensibilities.

SPEAKERS FROM SCRATCH
AS AN ACCOMPLISHED CARPENTER, I'VE ALWAYS WANTED to try my hand at building my own speaker systems. However, there now seems to be little or no information available on do-it-yourself systems. Is there a publication that specializes in speaker construction?

Seymour Elias
Miami, Fla.

There's only one that I know of, and it's excellent. "Speaker Builder" is a quarterly whose mailing address is P.O. Box 494, Peterborough, N.H. 03458. Each issue includes several good design articles, theoretical discussions, and lots of advertisements for raw drivers, crossover parts, kits, and books. "Speaker Builder" is well worth its $15 annual subscription rate to anyone who wants to get intimately involved in home speaker construction.

We regret that the volume of reader mail is too great for us to answer all questions individually.
Yamaha's new FFT speakers do the same for your ears.

Before you listen to a pair of FFT Series™ speakers, close your eyes. Yamaha's about to take your favorite music into a whole new dimension.

A sonic dimension of greater acoustic imaging, creating a soundstage purely and precisely articulated. Where instruments and voices are clearly defined in their own space, yet always in proper balance.

You hear the music the way it was meant to be heard: Horns stage left. Percussion stage rear. The singer's voice center stage and up front. And each distinguishable from the other.

You also hear more of each instrument's true range: Violins are rich and full. A flute riff ascends the scale. The acoustic bass thumps its lowest possible note.

The imaging becomes so dimensional, you'll swear you can "see" the performers on stage. While the emotions the music contains become even more powerful.

A truer picture of what you're hearing emerges, because we had a truer picture of the FFT Series in its design stage. A computer program called the Fast Fourier Transform (FFT) made this expanded soundstage and greater musicality possible. And helped our U.S. engineers create speakers using the most sophisticated drivers, crossover networks and cabinet design. All integrated for optimum performance.

What's more, each model has the power handling capacity to meet the expanded dynamic range of today's digital audio sources.

So listen to the new Yamaha FFT Series at any authorized Yamaha FFT dealer today. Discover how our world-renowned expertise in the creation and re-creation of fine music has been applied to the FFT Series. Then close your eyes, and watch your music come alive.

Yamaha Electronics Corporation, USA, P.O. Box 6660, Buena Park, CA 90622

100 YAMAHA 1887-1987
By ROBERT LONG

IN THE MARCH "TAPE TRACKS," IN WRITING ABOUT how easily tape frequency-response curves can be misinterpreted when they're made with comounding noise reduction (like Dolby or DBX) turned on, I briefly touched on the over-confusing subject of how the overload characteristics of tape correspond to the dynamic-range requirements of music. I find many home recordists misunderstand this relationship in ways that can adversely affect their recordings.

The subject wasn't so important when open-reel tapes were the norm, but the cassette medium's dynamic range and bandwidth—inhertently limited by its slow transport speed and narrow tracks—have evolved to fit music's requirements with far less "slop." A few dB of dynamic range or one octave of bandwidth one way or the other from an ideal music/tape match, and you can be in audible trouble.

You can expect, however, that most musical energy will fall in the midrange—say, for the purpose of this discussion, between 100 Hz (approximately the fundamental of the G an octave and a half below middle C) and 1 kHz (about the pitch of a soprano's high C, two octaves above middle C). If you record only acoustically originated music of average spectral properties, you can usually expect the energy above 2 kHz or so to drop off by roughly 6 dB per octave. This range will be full of overtones from the midrange fundamentals, and each of those overtones must be accurately reproduced if tone color isn't to be altered; but the farther above the fundamental frequency the overtone lies, the weaker it tends to be. However, bring a snare drum or a solo trumpet or bells into a prominent place in this acoustic picture, and the sonic demands may easily pierce that sloping 6-dB-per-octave ceiling. Add a synthesizer, which can generate levels of high-frequency energy that acoustic resonances alone are incapable of creating, and all bets are off.

Our ears' hypersensitivity to sounds between about 3 and 10 kHz, as compared to those in the midrange, explains why recordists have so much difficulty grasping the degree to which music's spectral requirements usually roll off toward the top end. The resulting misapprehension often takes the form: "Why does everybody talk about tape response at -20 dB when nobody records down there?" On the contrary, everybody "records down there," even when the meter is reading 0 dB or above.

Let me explain. With typical classical (and most other) music and a gain setting that gives a meter reading equivalent to +2 dB DIN or so on peaks (which is near the midrange overload point of typical tapes in typical decks), during a peak there will be considerable energy in the midrange frequencies, but nothing approaching those levels toward the top end of the frequency range, where response is most critical for subjectively good sound. A spectrum analyzer applied to such a signal may show frequency components reaching around 0 dB in the midrange. But it typically will display nothing higher than -10 dB from around 5 kHz on up and nothing higher than -20 dB above 10 kHz. The majority of music does, in fact, fit within this "envelope."

It's no accident that tape overload curves generally fall the envelope as well. Budget tapes often are poorly endowed toward the top end; ultrapremium tapes may give you a few dB of "unnecessary" headroom in the range around 5 kHz; and Dolby HX Pro will usually greatly exceed high-level high-frequency response as well. But the stereo cassette medium matches most types of music with little headroom to spare. The name of the game is to record all frequency bands as high as possible short of overload so that noise is as far below the signal as possible.

The exceptions to our level-vs-frequency model are ones, like some pop music, that may overstress the deep bass as well as the top end (although the former is less likely). With most metering, this means that you must know the properties of your input signal if you're to know when a 0-dB reading means "A-OK" and when it means "incipient overload." A cannon shot or a bass-drum wallop—just like a trumpet transient, a clatter of bells, or a clash of cymbals—could drive the tape into overload without registering as such on the meters. (Off-tape monitoring on a three-head deck will help, but it requires utter concentration, and not all recordists have such decks.)

Real-time spectrum analysis can help. You still have to know how each frequency band relates to the tape's overload curve, but at least you can see on a moment-to-moment basis whether the maximum energy lies in the safe midrange or in the potentially overloadable fringes. (VC built spectrum analysis into a consumer deck for this reason. Its prompt disappearance suggests that the buying public failed to perceive the worth of the feature.)

A number of companies have tried a different (and less costly) approach: equalized metering. The idea is to boost the deep bass and treble so that all frequencies will register close to 0 dB (or whatever constitutes maximum recommended level) when they are high enough to possibly cause tape overload. One equalization curve can't be ideal for all tapes, but metering the signal after the recording (EQ has been applied is a good approximation.

Unfortunately, old habits die hard. Flat meter response was a characteristic of the old, mechanical VU meters, which were a home-recording's nightmare compared to the instant, accurate response of modern light-emitting diode (LED) or similar displays. But because they were "professional," moving-needle meters have acquired a mystic—and totally undeserved—reputation as being somehow better than the consumer alternatives. As a matter of fact, many professionals now use peak-reading LED displays of one sort or another, often in conjunction with conventional VU meters. They use whatever works best; but home recordists (or those who design decks for us) can't seem to accept that principle. If we did, we'd insist on equalized peak metering.
We lead off with the Mission PCM-4000—a high-end Compact Disc player based on a souped-up 16-bit, four-times oversampling Philips chassis. Also reviewed are the A-06 integrated amplifier, a worthy representative of AR's new electronics line, and the Akai VS-525U VHS/Ni-FIVCR, which has a stereo amplifier of its own built in. Reports on Sony’s outstanding CDX-R88 car receiver/CD player and Zapco’s S-80 car power amplifier appear at the end of this month’s special car stereo section.

REPORT PREPARATION SUPERVISED
BY MICHAEL RIGGS, DAVID RANADA,
CHRISTOPHER J. ESSE, ROBERT
LONG, AND EDWARD J. FOSTER.
LABORATORY DATA (UNLESS OTHER-
WISE INDICATED) IS SUPPLIED BY
DIVERSIFIED SCIENCE LABORATORIES.
THE SUBWOOFER, EXPLAINED.
In a typical car stereo system, you hear too much of the road and not enough bass. A Cerwin-Vega car subwoofer (a separate bass speaker, simply mounted in the trunk, or for that matter, anywhere else in your car) will overcome the inherent drone, rumble and noise of the road and give you powerfully deep bass and full, clean sound.

THE MYTH OF THE MEGA-AMP.
A highly-efficient Cerwin-Vega car subwoofer with a massive magnet assembly can be driven with as little as 5 watts of power through a single amplifier and a passive crossover.

On the other hand, if you live for loud, one of our car subwoofers can handle multiple amps and up to 300 watts of power.

LOOK. IN THE TRUNK. IT'S A SUBWOOFER.
A Cerwin-Vega car subwoofer is easily mounted in your trunk or rear deck, behind the rear seat or in a separate enclosure. This goes for any car. Meaning, you don't have to drive a new car, a slick car or a like-totally-awesome car to enjoy great sound.

MEET THE LOUD FAMILY.
You can hear the Loud Family of Cerwin-Vega car subwoofers (six models are available, with either single or dual voice coils) through selected car stereo outlets and better custom installation shops nationwide. Class dismissed.

For More Information, Write or Call:
Cerwin-Vega: 555 East Easy Street, Simi Valley, CA 93065, (805) 844-9332 Telex: 662250
Cerwin-Vega Canada: 2360 Midland Ave., Unit 21/Scarborough, Ontario M1S 4A9
Cerwin-Vega Europe: Shahdenborgvej 71/DK-8680 By, Denmark
Mission PCM-4000 Compact Disc player

DIMENSIONS: 17 BY 3½ INCHES (FRONT), 11½ INCHES DEEP PLUS CLEARANCE FOR HEAT SINK AND CONNECTIONS. PRICE: $700. WARRANTY: "LIMITED," ONE YEAR PARTS AND LABOR. MANUFACTURER: MADE IN BELGIUM FOR MISSION ELECTRONICS, ENGLAND; U.S. DISTRIBUTOR: MISSION ELECTRONICS CORP., 5965 ATLANTIC DR., UNIT A, MISSISSAUGA, ONT. LVW 154, CANADA.

MISSION ELECTRONICS IS ONE OF THOSE comparatively small, performance-oriented firms that have entered the Compact Disc arena by designing electronics for CD transports made by industrial giants—usually meaning, as here, Philips of the Netherlands. Mission is quick to point out one difference: It buys transports with some customization by Philips and then builds onto them, while most competitors buy finished players and then strip off and replace what they don't like, which may engender compromises Mission is able to avoid.

It may interest American readers to learn that three of the major players at this game are located near each other in Cambridge, England. When we recall how audio companies sharing similar ideas and products have clustered around our own Cambridge, Massachusetts, the coincidence seems still more striking. The nearby competition must be a healthy stimulant, because Mission has established an even more secure niche among the CD avant-garde than it already had done in analog electronics and loudspeakers. It now has two CD models: the PCM-4000 reviewed here and the PCM-7000 (which has a remote handset with volume control, four power supplies instead of three, and a larger power transformer, among other features).

To make a PCM-4000, Mission buys from Philips a CD transport and the associated digital decoding chips, including a four-times oversampling digital filter. The digital-to-analog converter integrated circuit is a specially selected Philips part containing a separate 16-bit converter for each channel. Most of the rest of the player is supplied by Mission: the control circuitry, the three power supplies, and a specially designed post-converter output filter. This last contains an ultrasonic comb filter providing further attenuation of the artifacts of the original sampling process and of the digital filter's oversampling—a measure that should help minimize the chances of inducing intermodulation distortion in your amplifier.

The 4000's control scheme is quite simple, considering the features it offers, but the player doesn't wear its capabilities on its sleeve. That is, the gray-on-gray main transport buttons and the arrangement of those that supply secondary functions aren't ergonomically self-explanatory; you must learn how to operate them, rather than rely on their arrangement and markings. Once you do so, however, their behavior is beyond reproach.

When you insert a disc and allow the player to read the table of contents, the display lights up with the total number of tracks and the total playing time. When you start play (or if you go directly into the play mode by pressing the transport button with the drawer open), the display shows current track and index numbers plus time. The latter can be stopped between time elapsed from the beginning of the current track, total playing time of the disc (or of the prepro-
programmed sequence), and time remaining to the end of the disc or sequence.

If you have an indexed disc, you can program by index number as well as by track number—a highly valuable feature for some purposes, and one that is shared by very few players. If you use the preprogramming to play contiguous tracks (say, one multi-track piece from an anthology disc), playback appears continuous and seamless, which isn't true of all programmable players, some of which add small but distracting noises between tracks. There are 20 memory slots, each capable of holding one track or index number. Each index number also requires a track number for a full "address," using two memory slots for each index, so you can memorize as many as ten index cues. But you can intermix index points with full-track selections in your programmed sequence, permitting between ten and 20 selections, for overall programming flexibility at least as generous as that of any player we've tested to date.

You can move from one track to another by using NEXT and PREVIOUS. The scan mode (which also can be used, without audible output, when the player is in pause) speeds up progressively if you continue to press a scan button. We judge initial scan speed to be about three times playback speed. After two seconds or so, the scan goes into high

gear; then it goes into overdrive, whipping across the record with no audible output until you release the button. The repeat controls enable repetition of the whole disc or of a programmed sequence.

On the Diversified Science Laboratories' test bench, audio performance is exceptional in every respect, putting the PCM-4000 in the champion class. A very tiny ripple can be detected at the top end of the frequency response, but it's too small (a few hundredths of a dB, at worst) to show up in our response curves or even to warrant documentation in our numerical characterization of them. You won't obtain more exemplary response from any other CD player. The player also has the interesting characteristic, shared with another recent Philips-based player we have tested, of producing too low an output when reproducing a -90-dB 1-kHz test tone (which comes out too high with most other players) in DSL's linearity test. As before, we chalk this up to non-monotonicity in the dual digital-to-analog converter chip (despite its being a selected part) or perhaps to a numerical error in the digital-filter mathematics.

Listening quality, nonetheless, is superb. But the question posed by Mission's design is whether the listening quality is audibly superior to that of other excellent CD players. And here we can supply no clear consensus.

All listeners agreed to the excellence of the sound, but not to its clear superiority over other models. Perhaps that should be expected when the measurable differences between fine models are so minute—and, with that in mind, perhaps "superb" should be good enough to please anyone.

But even if you're not among those who can discover some ineffable "extra" in the PCM-4000's sound, there are plenty of reasons to buy (or at least audition) it. Not only is performance outstanding, but so is programming flexibility. In both respects, we're satisfied that you can't do much better among today's models, and you probably won't be able to for some time to come.

Acoustic Research A-06
Integrated amp

For Acoustic Research, 1986 marked a reentry into electronics. Almost a generation ago, its first component line was extremely successful because it represented both excellent performance and good value—thanks to competent and, in some cases, truly innovative design and the avoidance of frills. But those models arrived at a time when it had become increasingly difficult for American-made electronics to compete with equipment from the Far East, and eventually AR had to drop out. Now it is
back, thanks to a contract for assembly in the Orient, and with much the same objectives. This gives the company the opportunity to call the shots from its U.S. headquarters but still remain competitive.

The most obviously proprietary element in the new line is the back-tilted front panel that all new AR electronic components share. Along the bottom is a setback that aligns with the tops of other AR components when they are stacked. At the left end of this setback, the A-06 and most other units have a headphone output. All have a flush right side and a small overhang at the left. Thus, they present a pleasantly caggy look when stacked, but their appearance may not mix very well with that of other brands.

This reinforces another reason for choosing multiple AR components: The remote-control system—which can be used for the A-06 via a multipin connector on the back panel (but which wasn’t included in our test)—is centered in the T-04, the only tuner currently in the series. In every other respect, however, the A-06 is interchangeable in function with other medium-price integrated amps that include video switching.

The video portion of the A-06 consists of hookups for two video components, labeled VCR-1 and VCR-2. The first has recording connections for video and stereo audio and playback connections for the audio only; the second offers video and audio playback only. You can thus dub videotapes onto VCR-1 from VCR-2 (which would be equally appropriate for a Laserdisc player or stereo-TV tuner), but not in the opposite direction. And you can listen to the sound from either VCR input but not record sound from the A-06 onto videotape (to overdub background music onto your home videotapes, say, or to capture simulcasts via an FM tuner connected to the amps).

There are connections for two audio-only recorders as well. Each can record from any source (including the other audio recorder and the video audio) for which the A-06 has switching. But you can’t record on both decks simultaneously, nor can you monitor the output of the recording deck, even if it has a separate playback head. This is, in short, not a model designed for those with complex taping requirements (whose needs AR says it is addressing in models now under development); rather, it offers more-than-minimum facilities and straightforward switching for those with relatively simple requirements in both audio taping and video switching.

The large volume knob, the selector buttons, and a “mute” that attenuates output by approximately 20 dB are on the right end of the front panel. Selecting a source lights up a green indicator above the button; the power switch, at the left, is encircled by a similar green pilot. The remaining controls are hidden behind a door that swings down at the touch of a finger. There you’ll find an on/off switch for the back-panel speaker terminals (designed to accept bare wires, spade lugs, or banana plugs for one speaker pair), Tape 1/Tape 2 and VCR-1/VCR-2 selectors, a mono/stereo mode switch, the bass and treble controls, a tone-control, and the balance control.

On the Diversified Science Laboratories’ test bench, the tone controls proved exceptionally gentle in action. The bass shelves the response at about ±6 dB below 100 Hz, while the treble does likewise above 10 kHz. Neither the bass nor the treble has an appreciable effect above or below 1 kHz, respectively. If you need something more extreme or complex, you can connect an outboard equalizer, replacing a pair of back-panel pre-out/main-in jumppers.

The phono response is quite flat over most of the audio range and very similar in both the fixed-coil and moving-coil modes. In both, there is a slight (about ¾ dB) rise over a broad treble range and a somewhat more limited one in the bass, followed by a sharp infrasonic rolloff. As a result, attenuation in the 5-Hz range (where warps work their worst woes) is about 20 dB. Overall response, as measured through a high-level input, is good but not quite flat, and accounts for most of the bass rise discernible in the phono-response curves, although not for the treble rise.

The power figures not only surpass the rating by a comfortable margin but continue to rise as the load is reduced, indicating reliable behavior with speakers whose impedance is unusually low at some frequencies (or, although the output connections don’t allow for it, with paralleled speaker pairs). Power is therefore available on a relatively unrestricted basis, given the A-06’s moderate price and generally unpertinuous overall approach.

And “unpretentious” is certainly a key characterization. For the buyer who doesn’t want to settle for a run-of-the-mill receiver but isn’t ready for high-end esoterica either, the A-06 is certainly a viable alternative as the central building block of a new audio video system. For some, the radical styling may give pause; for others, it will be a considerable plus. Simple though it is in concept, the amp is utterly distinctive in this respect and offers—finally—an escape from the wilderness of squared-off black or brushed-aluminum boxes into which components has wandered.
Now, the best and most exciting features of Modern Photography come alive in full-life sound and motion. Each issue holds sixty minutes of useful information and entertainment on the techniques, personalities and equipment that'll make you a better photographer. Each issue brings Herbert Keppler, Editorial Director, and his staff of expert writers into your home taking you through what's newest and finest in serious photography.

Besides all that, there are lab reports, professional recommendations, interesting collectibles, tips on film, lenses and accessories and a look at the latest in video technology and techniques.

A subscription to Modern Photography Video Magazine is the newest, brightest way to stay in touch with your passion. A perfect complement to your regular monthly magazine.

Now, during our introductory six months, order your subscription and get 20% off our regular yearly price. Four quarterly issues for just $79.95, including shipping and handling. And if you're not completely satisfied, return the first issue within 30 days of receipt for a full refund.

Is Modern Photography really live? You bet—on Beta or VHS. Order now!
In speakers as in cars, the make is everything.

Amazing but true: people can spend hours choosing a car receiver—and then pay no attention to the speakers. Obviously, they’ve never heard what a difference really good car speakers can make. They haven’t experienced the muscular punch of deep bass or the breathtaking intricacy of clear treble.

In short, they’ve never heard AR car loudspeakers.

At some companies, speakers are an afterthought. At AR, they’re a way of life. This attitude is amply demonstrated in the superior power handling of our liquid-cooled tweeters. It’s evident in AR’s preference for full crossover networks. It’s expressed in every mica-filled polypropylene driver, every solid steel frame, every wire-mesh grille. AR even created a car amplifier to make these speakers sound their best.

AR car speakers range from most affordable to most luxurious. They’re easy to install. But once they’re in, you’d no sooner change them than change your car. Acoustic Research. We speak from experience.
Akai VS-525U
VHS Hi-Fi VCR


Akai's VS-525U is one of the least expensive VHS Hi-Fi decks on the market, but it is equipped with what we consider to be the most useful VHS features, including the HQ (High Quality) recording system that is now becoming almost universal among VHS decks. And it has one feature we've never seen before in a VHS unit: a built-in stereo amplifier with a power rating of 10 watts (10 dBW) per channel.

Admittedly, the amplifier is rated only over a range of 90 Hz to 20 kHz and at 0.9 percent THD (which isn't exactly high-end audio quality), but it is useful in adding stereo capability to an existing mono TV set or monitor. To that end, the VS-525U's tuner will decode stereo television broadcasts (including the SAP channel) and can be preset to receive any 32 of 107 VHF, UHF, and cable channels. You can therefore use the VCR's tuner and power amp to "convert" your system for stereo-TV reception.

The VS-525U records at the two outer VHS speeds—SP and EP (which Akai refers to as SLP)—but it will play LP tapes as well. Three special effects are available: still frame, slow motion, and scan. But since it is a two-head deck, the special effects are much clearer when playing an EP tape than an SP tape, and slow motion is available only at EP. (If this limitation concerns you, you'll find the four-head VS-565U essentially identical to the VS-525U, except for superior special effects at the SP speed.) The slow-motion feature is somewhat unusual: Playback can be changed to 1/24, 1/12, 1/6, or 1/4 normal speed by repeatedly pressing slow. The deck memorizes the last setting and returns to it at the next press of slow.

The unit's two-week/six-event memory can be programmed to record the same time slot and channel number on the same day of every week (or daily on Monday through Friday of the same week) as a single "event." Unlike the discontinued Akai VS-603U (test report, December 1985), the VS-525U's programming system uses a fairly straightforward sequence of button pushes, which we find much simpler to remember. As with the earlier deck, Akai makes liberal use of on-screen legends to lead you through the programming operation. Akai's sleep-timer feature is run via the programming buttons; it can be set to stop recording or playback at any desired time after activation.

Most of the deck's front-panel controls are duplicated on the supplied wireless remote. These include buttons for power, TV/VCR selection, channel selection, autowind to counter zero, the programming controls, the transport controls (including RECORD), and VOLUME, which controls the VS-525U's built-in power amplifier. A ten-digit keypad on the remote enables you to tune directly to any channel; a feat you cannot accomplish by using the deck's front panel.

Not duplicated on the remote are the controls for tape eject, counter reset, display (which toggles the front-panel and on-screen displays between clock and counter mode), recording-speed selection, normal and slow-speed tracking, sharpness, input (CONTINUED ON PAGE 30.)

VCR SECTION

Except where otherwise indicated, the recording data shown here apply to both speeds, SP and EP. All measurements were made at the direct audio and video outputs, with test signals injected through the direct audio and video inputs. For VHS Hi-Fi, the 0 dB reference input level is the voltage required to produce 3 percent third harmonic distortion at 315 Hz; for the standard audio recording mode, at 10 dB above the voltage at which the automatic level control (ALC) produces 3 dB of compression at 315 Hz. The 0 dB reference output level is the output voltage from a 0 dB input.

VHS Hi-Fi RECORD/PLAY RESPONSE (±20 dB)

<table>
<thead>
<tr>
<th>HZ</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>SP</td>
<td>+3</td>
<td>-3</td>
<td>+2</td>
<td>+1</td>
<td>0</td>
<td>-1</td>
<td>-2</td>
<td>-3</td>
<td>-4</td>
<td>-5</td>
</tr>
<tr>
<td>EP</td>
<td>+3</td>
<td>-3</td>
<td>+2</td>
<td>+1</td>
<td>0</td>
<td>-1</td>
<td>-2</td>
<td>-3</td>
<td>-4</td>
<td>-5</td>
</tr>
</tbody>
</table>

STANDARD RECORD/PLAY RESPONSE (±20 dB)

<table>
<thead>
<tr>
<th>HZ</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>SP</td>
<td>48.7 (dB)</td>
<td>97.7 (dB)</td>
<td>47.7 (dB)</td>
<td>97.7 (dB)</td>
<td>47.7 (dB)</td>
<td>97.7 (dB)</td>
<td>47.7 (dB)</td>
<td>97.7 (dB)</td>
<td>47.7 (dB)</td>
<td>97.7 (dB)</td>
</tr>
<tr>
<td>EP</td>
<td>48.7 (dB)</td>
<td>97.7 (dB)</td>
<td>47.7 (dB)</td>
<td>97.7 (dB)</td>
<td>47.7 (dB)</td>
<td>97.7 (dB)</td>
<td>47.7 (dB)</td>
<td>97.7 (dB)</td>
<td>47.7 (dB)</td>
<td>97.7 (dB)</td>
</tr>
</tbody>
</table>

INDICATOR CALIBRATION (315 Hz, VHS Hi-Fi)

<table>
<thead>
<tr>
<th>for 0-dB input</th>
<th>+10 dB</th>
<th>+5 dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>for -10-dB input</td>
<td>+10 dB</td>
<td>+5 dB</td>
</tr>
</tbody>
</table>

DISTORTION (THD at -10 dB input; 50 Hz to 5 kHz)

<table>
<thead>
<tr>
<th>standard</th>
<th>VHS Hi-Fi</th>
<th>SP</th>
<th>≤ 0.5%</th>
<th>≤ 0.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP</td>
<td>≤ 0.5%</td>
<td>≤ 0.5%</td>
<td>≤ 0.5%</td>
<td>≤ 0.5%</td>
</tr>
</tbody>
</table>

CHANNEL SEPARATION (315 Hz, VHS Hi-Fi)

<table>
<thead>
<tr>
<th>channel</th>
<th>standard</th>
<th>VHS Hi-Fi</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>≤ 51.5%</td>
<td>≤ 51.5%</td>
</tr>
<tr>
<td>EP</td>
<td>≤ 51.5%</td>
<td>≤ 51.5%</td>
</tr>
</tbody>
</table>

INDICATOR "BALLISTICS" (Speeds: SP, EP)

<table>
<thead>
<tr>
<th>Response time (sec)</th>
<th>0.6 msec</th>
<th>1.500 msec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decay time (sec)</td>
<td>0.000</td>
<td>97</td>
</tr>
<tr>
<td>Overload (mV)</td>
<td>0</td>
<td>1,780</td>
</tr>
</tbody>
</table>

FLUTTER (AMS weighted peak; 2/7; average)

<table>
<thead>
<tr>
<th>standard</th>
<th>VHS Hi-Fi</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>± 0.02%</td>
</tr>
<tr>
<td>EP</td>
<td>± 0.02%</td>
</tr>
</tbody>
</table>

SENSITIVITY (for 0-dB output; 315 Hz)

<table>
<thead>
<tr>
<th>standard</th>
<th>VHS Hi-Fi</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>370 mV</td>
</tr>
<tr>
<td>EP</td>
<td>370 mV</td>
</tr>
</tbody>
</table>

MAY 1987 35
Matthew Polk's New Generation of Revolutionary TRUE STEREO SDAs

Matthew Polk's revolutionary SDAs have been acclaimed around the world. Australian HiFi called them "A stunning achievement."

Prices are Manufacturer's Suggested Retail. Prices may vary.
Matthew Polk's Superior Sounding SDA's Win Audio Video Grand Prix Speaker of the Year
Five Years in a Row!

1982 — SDA 1
1983 — SDA 2
1984 — SDA CRS
1985 — SDA SRS
1986 — SDA SRS 2

“Why SDA’s Always Sound Better”

Polk's critically acclaimed, 5 time AudioVideo Grand Prix Award winning SDA technology is the most important fundamental advance in loudspeaker technology since stereo itself. Listeners are amazed when they hear the huge, lifelike, three-dimensional sonic image produced by Polk's SDA speakers. The nation's top audio experts agree that Polk SDA loudspeakers always sound better than conventional loudspeakers. Stereo Review said, "Spectacular...the result is always better than would be achieved by conventional speakers." High Fidelity said, "Astounding...We have yet to hear any stereo program that doesn't benefit." Now all 5 SDAs incorporate many of the 3rd generation advances in SDA technology pioneered in the Signature Edition SRS and SRS2 including full complement sub-bass drive, time-compensated phase-coherent driver alignment and bandwidth-optimized dimensional signal.

1982 — SDA 1
Speaker of the Year
1983 — SDA 2
Speaker of the Year
1984 — SDA CRS
Speaker of the Year
1985 — SDA SRS
Speaker of the Year
1986 — SDA SRS 2
Speaker of the Year

“Basic concept of stereo is that a much more lifelike three-dimensional sound is achieved by having 2 different signals, each played back through a separate speaker and each meant to be heard by only one ear apiece (L or R). So quite simply, a mono loudspeaker is designed to be heard by two ears at once while true stereo loudspeakers should each be heard by only one ear apiece (like headphones). The revolutionary Polk SDAs are the first TRUE STEREO speakers engineered to accomplish this and fully realize the astonishingly lifelike three-dimensional imaging capabilities of the stereophonic sound medium.

“A stunning achievement”

Polk SDA Technology solves one of the greatest problems in stereo reproduction. When each ear hears both speakers and signals, as occurs when you use conventional (Mono) speakers to listen in stereo, full stereo separation is lost. The undesirable signal reaching each ear from the “wrong” speaker is a form of acoustic distortion called interaural crosstalk, which confuses your hearing.

Why SDA’s Always Sound Better

Stereo Review confirmed the unqualified sonic superiority of Matthew Polk's revolutionary SDA Technology when they wrote, "These speakers always sounded different from conventional speakers — and in our view better — as a result of their SDA design.

Without exaggeration, the design principals embodied in the SDAs make them the world's first true stereo speakers. The basic concept of speaker design was never modified to take into account the fundamental difference between a mono and stereo signal. The fundamental and basic concept of mono is that you have one signal (and speaker) meant to be heard by both ears at once. However, the fundamental and basic concept of stereo is that a much more lifelike three-dimensional sound is achieved by having 2 different signals, each played back through a separate speaker and each meant to be heard by only one ear apiece (L or R). So quite simply, a mono loudspeaker is designed to be heard by two ears at once while true stereo loudspeakers should each be heard by only one ear apiece (like headphones). The revolutionary Polk SDAs are the first TRUE STEREO speakers engineered to accomplish this and fully realize the astonishingly lifelike three-dimensional imaging capabilities of the stereophonic sound medium.

“Literally a New Dimension in the Sound”

The Polk SDA systems eliminate interaural crosstalk distortion and maintain full, True Stereo separation, by incorporating two completely separate sets of drivers (stereo and dimensional) into each speaker cabinet. The stereo drivers radiate the normal stereo signal, while the dimensional drivers radiate a difference signal that acoustically and effectively cancels the interaural crosstalk distortion and thereby restores the stereo separation, imaging and detail lost when you listen to normal “mono” speakers. The dramatic sonic benefits are immediately audible and remarkable.

“Mindboggling, astounding, flabbergasting”

Words alone cannot fully describe how much more lifelike SDA TRUE STEREO reproduction is. Reviewers, critical listeners and novices alike are overwhelmed by the magnitude of the sonic improvement achieved by Polk's TRUE STEREO technology. You will hear a huge sound stage which extends not only beyond the speakers, but beyond the walls of your listening room itself. The lifelike ambience revealed by the SDAs makes it sound as though you have been transported to the acoustic environment of the original sonic event. Every instrument, vocalist and sound becomes tangible, distinct, alive and firmly placed in its own natural spatial position. You will hear instruments, ambience and subtle musical nuances (normally masked by conventional speakers), revealed for your enjoyment by the SDAs. This benefit is accurately described by Julian Hirsch in Stereo Review, “…the sense of discovery experienced when playing an old favorite stereo record and hearing, quite literally, a new dimension in the sound is a most attractive bonus...” Records, CDs, tapes, video and FM all benefit equally as dramatically.

“Mindboggling, astounding, flabbergasting”

Words alone cannot fully describe how much more lifelike SDA TRUE STEREO reproduction is. Reviewers, critical listeners and novices alike are overwhelmed by the magnitude of the sonic improvement achieved by Polk's TRUE STEREO technology. You will hear a huge sound stage which extends not only beyond the speakers, but beyond the walls of your listening room itself. The lifelike ambience revealed by the SDAs makes it sound as though you have been transported to the acoustic environment of the original sonic event. Every instrument, vocalist and sound becomes tangible, distinct, alive and firmly placed in its own natural spatial position. You will hear instruments, ambience and subtle musical nuances (normally masked by conventional speakers), revealed for your enjoyment by the SDAs. This benefit is accurately described by Julian Hirsch in Stereo Review, “…the sense of discovery experienced when playing an old favorite stereo record and hearing, quite literally, a new dimension in the sound is a most attractive bonus...” Records, CDs, tapes, video and FM all benefit equally as dramatically.

“Mindboggling, astounding, flabbergasting”

Words alone cannot fully describe how much more lifelike SDA TRUE STEREO reproduction is. Reviewers, critical listeners and novices alike are overwhelmed by the magnitude of the sonic improvement achieved by Polk's TRUE STEREO technology. You will hear a huge sound stage which extends not only beyond the speakers, but beyond the walls of your listening room itself. The lifelike ambience revealed by the SDAs makes it sound as though you have been transported to the acoustic environment of the original sonic event. Every instrument, vocalist and sound becomes tangible, distinct, alive and firmly placed in its own natural spatial position. You will hear instruments, ambience and subtle musical nuances (normally masked by conventional speakers), revealed for your enjoyment by the SDAs. This benefit is accurately described by Julian Hirsch in Stereo Review, “…the sense of discovery experienced when playing an old favorite stereo record and hearing, quite literally, a new dimension in the sound is a most attractive bonus...” Records, CDs, tapes, video and FM all benefit equally as dramatically.

“Mindboggling, astounding, flabbergasting”

Words alone cannot fully describe how much more lifelike SDA TRUE STEREO reproduction is. Reviewers, critical listeners and novices alike are overwhelmed by the magnitude of the sonic improvement achieved by Polk's TRUE STEREO technology. You will hear a huge sound stage which extends not only beyond the speakers, but beyond the walls of your listening room itself. The lifelike ambience revealed by the SDAs makes it sound as though you have been transported to the acoustic environment of the original sonic event. Every instrument, vocalist and sound becomes tangible, distinct, alive and firmly placed in its own natural spatial position. You will hear instruments, ambience and subtle musical nuances (normally masked by conventional speakers), revealed for your enjoyment by the SDAs. This benefit is accurately described by Julian Hirsch in Stereo Review, “…the sense of discovery experienced when playing an old favorite stereo record and hearing, quite literally, a new dimension in the sound is a most attractive bonus...” Records, CDs, tapes, video and FM all benefit equally as dramatically.

“Mindboggling, astounding, flabbergasting”

Words alone cannot fully describe how much more lifelike SDA TRUE STEREO reproduction is. Reviewers, critical listeners and novices alike are overwhelmed by the magnitude of the sonic improvement achieved by Polk's TRUE STEREO technology. You will hear a huge sound stage which extends not only beyond the speakers, but beyond the walls of your listening room itself. The lifelike ambience revealed by the SDAs makes it sound as though you have been transported to the acoustic environment of the original sonic event. Every instrument, vocalist and sound becomes tangible, distinct, alive and firmly placed in its own natural spatial position. You will hear instruments, ambience and subtle musical nuances (normally masked by conventional speakers), revealed for your enjoyment by the SDAs. This benefit is accurately described by Julian Hirsch in Stereo Review, “…the sense of discovery experienced when playing an old favorite stereo record and hearing, quite literally, a new dimension in the sound is a most attractive bonus...” Records, CDs, tapes, video and FM all benefit equally as dramatically.

“Mindboggling, astounding, flabbergasting”

Words alone cannot fully describe how much more lifelike SDA TRUE STEREO reproduction is. Reviewers, critical listeners and novices alike are overwhelmed by the magnitude of the sonic improvement achieved by Polk's TRUE STEREO technology. You will hear a huge sound stage which extends not only beyond the speakers, but beyond the walls of your listening room itself. The lifelike ambience revealed by the SDAs makes it sound as though you have been transported to the acoustic environment of the original sonic event. Every instrument, vocalist and sound becomes tangible, distinct, alive and firmly placed in its own natural spatial position. You will hear instruments, ambience and subtle musical nuances (normally masked by conventional speakers), revealed for your enjoyment by the SDAs. This benefit is accurately described by Julian Hirsch in Stereo Review, “…the sense of discovery experienced when playing an old favorite stereo record and hearing, quite literally, a new dimension in the sound is a most attractive bonus...” Records, CDs, tapes, video and FM all benefit equally as dramatically.

“Mindboggling, astounding, flabbergasting”

Words alone cannot fully describe how much more lifelike SDA TRUE STEREO reproduction is. Reviewers, critical listeners and novices alike are overwhelmed by the magnitude of the sonic improvement achieved by Polk's TRUE STEREO technology. You will hear a huge sound stage which extends not only beyond the speakers, but beyond the walls of your listening room itself. The lifelike ambience revealed by the SDAs makes it sound as though you have been transported to the acoustic environment of the original sonic event. Every instrument, vocalist and sound becomes tangible, distinct, alive and firmly placed in its own natural spatial position. You will hear instruments, ambience and subtle musical nuances (normally masked by conventional speakers), revealed for your enjoyment by the SDAs. This benefit is accurately described by Julian Hirsch in Stereo Review, “…the sense of discovery experienced when playing an old favorite stereo record and hearing, quite literally, a new dimension in the sound is a most attractive bonus...” Records, CDs, tapes, video and FM all benefit equally as dramatically.
Imagine using a word processing and drawing program that lets you integrate charts and pictures that you 'paint' or 'clip' into your text. Well, if you use an IBM PC or Clone, now you can have graphically dramatic documents, from business or personal letters, to proposals, to organization charts, even with a daisy wheel printer.

It's easy. It's impressive. And, now your thoughts can be powerfully illustrated in both words and graphics.

After all, for illustrating abstract data and thoughts, nothing beats a dramatic chart or drawing. So, let your ideas leap off the page by using integrated text and graphics. Your thoughts are sure to make an impressive impact.

Whether you write letters, bank proposals, term papers, company manuals or news letters, you can forget complicated and expensive laser printing. And, you can forget complicated expensive desktop publishing programs.

Now for just $89\textsuperscript{99}, you can use your daisy wheel, dot matrix or ink jet printer to print normal text. Plus, you can integrate simply fabulous graphs and drawings into your creations.

INCREDI.BLY EASY

Savtek, a brain trust group, has developed an easy to use yet incredibly sophisticated integrated word processing and graphics program.

Just create your letters, proposals, or reports as you would with any other word processor. In fact, if you already have a document created in virtually any other word processor, you can 'grab' it into Savtek's instantly.

You'll produce visually powerful technical papers and manuals with drawings and charts, and dramatic marketing reports with graphs. You'll produce sales proposals with panache.

And since there's no complicated training needed (if you can run a word processor, you can run Savtek), you'll make great impressions, fast.

Anyway, once you've created the written part of your report, using Savtek's sophisticated automatic word processing features, you're ready to add pictures, charts and graphs.

Just select from the over 100 supplied changeable pictures or draw your own, using the automated ICON based drawing program.

Later, you'll learn much more about the sophisticated drawing program that lets you draw, paint, fill, expand, reduce, copy, and move your pictures.

And, you'll form squares, circles and triangles automatically. Anyone can draw with it because it's totally automated and uses arrow keys and doesn't require a mouse. But, read on.

Once you've selected a picture, the computer will produce an automatically sized box representing it. Just position the box wherever you want the picture to be in the text.

Like magic, the actual picture will appear and the text will automatically reformat itself around it.

And, speaking of reformatting, this program will automatically make page breaks and recalculate each page as you write or edit. If you make an addition to page 1 of a 10 page report, the effect will ripple through all 10 pages.

So, whatever length you've chosen for each page (including headers, footers and automatic page numbering), will automatically be preserved.

You'll particularly like the cut and paste features of this word processing program which allow you to copy, move or delete sections of your text.

Of course, you'll have automatic Wordwrap, Hidden Hyphenation, Justified Smooth Right or Regged Right text. Plus, you'll have Find, Replace and Search.

And look how you can format your document. There are 5 page templates called rulers which allow you to automatically set up your page.

You can select any right and/or left margins, your tabs, one, two or three line spacing, and the number of blank lines at the top and bottom of your page.

Each of the 5 rulers comes with different default settings. But, you can adjust and save them or change them and even use several at one time on a page.

HOW DO THE PRINTERS WORK?

I use a daisy wheel printer because I like my letters to look personal. I've always had to switch to a dot matrix printer for graphs and illustrations.

Unfortunately, I couldn't have my graphics on the same page as my text.

Now, because this program can use the period on the daisy wheel to create all the charts and graphic symbols you see within this ad, I don't need to switch printers any more.

And while it doesn't create the graphics as fast as a dot matrix, the quality is superb. Now my graphics can be impressively integrated into my text.

Note: This program does not produce two column news letters in a single action. Simply create a double length column and cut it when you have it printed.

No matter what printer you use, daisy wheel, dot matrix (with or without near letter quality printing) or ink jet (color or single color), you'll have powerful looking documents to really present your ideas in the most professional manner.

DESKTOP PUBLISHING

Desktop publishing is about the hottest category of computer programming. It seems that everyone has discovered the impact of combining text and graphics.

And very impressive presentations are just what Savtek's ETG Desktop publishing system provides for you.

Imagine leveraging the capabilities of your own IBM or Clone, your own printer and your own keyboard to produce the documents you see on these pages, with nothing else to buy.

THE 1000 WORD PICTURE

First a confession. I can't draw. That's why you don't see drawings in DAK's catalogs. But I've been amazed at how creative I can be with this paint program.

It's easy. You do everything with the arrow keys and the return key. By using the arrow keys you can draw in any direction with a choice of 12 brush shapes.

There's an erase function to eliminate anything you don't like. And here's my favorite function. UNDO is a function that works throughout this program.

For Daisy Wheel, Dot Matrix & Ink Jet Printers

$89.99 Desktop Publishing Breakthrough
... Publishing Continued

It simply removes the last thing you did. So, no matter what you do wrong, you’re a button away from removing it. If you don’t want a solid line, just spray an area. It’s like using a spray can.

Let’s say you want to connect two points with a straight line. Use the Angle Line. It produces a computer-generated straight line between any two points.

What if you want a circle? Just touch the return key. Then use the diagonal arrow key to enlarge or reduce the circle. If you use the up/down or right/left arrows, you’ll get an ellipse.

In the same way you can create squares, rectangles or triangles. And you’ll be amazed how many things, from houses to technical drawings, are made up of squares, rectangles, circles and triangles.

But, that’s not all. You can choose any of 32 background patterns to fill in enclosed areas or border lines. And if 32 isn’t enough, you can design your own. There’s so much more. You can juggle a picture. Imagine, turning it over or sideways with the touch of a button.

You can copy or move a picture or even part of a picture right on the screen. So, draw it once and copy it or move it. But, here’s my favorite. You can enlarge or reduce any picture or part of a picture right on the screen. So you can change its size equally, or you can stretch it out or make it tall and thin. Wow!

There are 12 included font/sizes. So you can have large or small type in your choice of styles within a picture or integrated with your text.

And, each of the 12 font/sizes can be shown on the screen and printed normal, in bold, in italic, or in shadow. Plus, you can write normally across the page, up the page, down the page or upside down.

Finally, you can zoom into any small section of the screen and edit your pictures, pixel by pixel. With this kind of power, you don’t need to be an artist, just have the ability to push a button.

You can operate this Paint program independently. Or, you can access any picture from within word processing. So, for banners and pictures, you can print directly from the Paint Program. Or, for everything previously described, simply access your pictures, captions, graphs or charts through the desktop publishing section.

This program is incredibly powerful, yet you’ll be comfortable using it within just a few hours.

Every picture in this ad was created with this program. And, you haven’t even seen the tip of the iceberg of its capabilities. For example, if you have a word picture on the screen, you can bring a second picture up and join them together.

**WHO CAN USE THE SYSTEM**

All you need is an IBM PC, AT, XT or 100% compatible with standard IBM CGA or EGA graphics capability. It must have at least 256K, and either two floppy disk drives or one floppy and a hard disk.

Below is a list of some of the dot matrix, ink jet and daisy wheel printers that have been tested with this program. If your printer is compatible with any of these printers, it should work too.

Special Note: Most clone printers are Diablo 620/630 compatible, so they will work with this program.

**Special Note:** With a color printer you can print 3 colors plus black text.

C-100, 5310. Epson FX-80, FX-85, FX-105, FX-80B (color), LO-800, LC1500, LX300, MX80 with Graftrax Plus or Graftrax, FG-100, Hewlett Packard 2225C, Think Jet or QMS JetJet, Apple, LaserJet Plus, IBM 80CP 9, GS-9, IBM Pro-

**FINAL FACTS**

There’s a pop down calculator which lets you deposit your results right into your text. A clock/timer picks up the time from your computer, and there’s a 7,300 year calendar. They are all available as pop-down windows. Savtek’s program is backed by a standard limited software warranty/license. It comes with a superb, easy to use reference manual.

**DESKTOP PUBLISHING FOR YOU RISK FREE**

Make your ideas explode in front of your readers. When you send out a letter or proposal, let it be really dramatic... They will be your ideas, but you’ll be presenting them like never before.

If you’re not 100% satisfied, simply return it in unused condition within 30 days for a courteous refund.

To order Savtek’s ETG Integrated Word Processing and Graphics Desktop Publishing System for your IBM PC or Clone, call toll free or send your check for the breakthrough price of just $899 (4 pages) Order No. 4010. CA add tax.

*Look at the 12 sample pages I created. You’ll see graphs, pictures and charts mixed into my text. I even designed a logo for my newsletter. Just think about the impact you’ll make when you present your ideas with a combination of text and graphics. And oh, it’s so incredibly easy to use.*

[DAK Industries](https://www.dakindustries.com)

Call Toll Free 800-325-0800 From California, Call 6AM-5PM Monday-Friday PST

Technical Information: 800-272-3200

[To order](https://www.dakindustries.com)

For any other inquiries: 800-243-2866 8200 Ramset Ave., Canoga Park, CA 91304
(Continued from page 25)

selection (choosing among external tuner, SAP, or simulcast settings), and audio-monitor selection. This last switch between edge-track playback and automatic playback of the stereophonic VHS Hi-Fi tracks (if they are present). Another audio-monitor switch routes the left track to both outputs, the right track to both, or provides full stereo reproduction (from VHS Hi-Fi tapes). As usual, the audio recording level can be set only from the front panel, which is also where you set the deck’s clock.

On the back panel are pairs of twin-lead binding posts for a UHF antenna and its feed-through connection to a TV, along with a pair of F connectors for the VHF antenna and the RF television link. With this basic arrangement, connecting the output of a cable box to the VCR’s antenna input precludes the recording of one program while viewing another. RCA pin-jack connections are provided for the direct audio and video inputs and outputs, and speaker outputs are standard push connectors.

In Diversified Science Laboratories’ tests, the VS-525U’s tuner exhibited good video frequency response, for a potential luminance horizontal resolution of about 300 lines. Luminance level is close to the mini and grayscale level near perfect. The rather substantial degree of chroma differential gain occurs only at the brightest scene level, so the decrease in color saturation that the measurement implies is unlikely to be apparent. Chroma differential phase (change in hue with scene brightness) is quite low. Chroma level is a trifle high, but it is uniform across the color spectrum. Chroma phase error is a bit higher than average, but almost all of it can be corrected by touching up the monitor’s tint control.

The tuner’s audio frequency response is quite uniform up to nearly 15 kHz, above which a whistle filter does an excellent job of suppressing the horizontal-scan component at 15.7 kHz. The audio output level varies with the setting of the recording-level sliders. At their detents, the deck is adjusted to record TV broadcasts properly, and with setting and impedance should present no compatibility problems with other audio equipment. DSL did find the tuner’s audio distortion much higher than average and the signal-to-noise ratio to be also less than stellar.

For the most part, the VS-525U’s video recording performance can stand comparison with that of the most expensive VHS machines. Response at the faster speed holds up to beyond 2 MHz for a luminance resolution approaching 200 lines. Even at EP (SLP), response is down only 7 dB at 2 MHz, which implies a resolution close to 160 lines. And at both speeds, resolution can be somewhat improved (with very little increase in noise) by turning up the picture control. Luminance and chrominance levels are perfect at both speeds and there is no measurable average chroma phase error. Gray-scale linearity is off only slightly, as are chroma differential gain and chroma differential phase (but to a greater extent).

Although audio response in the VHS Hi-Fi mode is excellent at DSL’s standard test level, there are signs that the Hi-Fi system’s noise reduction circuit is mistracking at lower recording levels (~30 and ~40 dB referred to the recording level producing 3-percent THD). We found similar behavior in early VHS Hi-Fi decks, but recent models have been free of this problem. Although this anomaly may escape aural detection when recording and reproducing the average TV broadcast, it can be heard when listening to music with wide dynamic range.

On the positive side: In the VHS Hi-Fi mode, the Akai VS-525U’s residual noise level is unusually low, midband channel separation is exceptionally high, and midband distortion is very low (less than 0.1 percent). In fact, at DSL’s standard test level (~10 dB referred to 3-percent THD), distortion barely exceeds 0.5 percent from 50 Hz to 5 kHz and just grazes 0.75 percent at 6.3 kHz. As expected, clutter is below reporting limits at both speeds in the Hi-Fi mode.

While no match for its Hi-Fi recording, the VS-525U’s audio performance in the monophonic edge-track mode is still impressive. Response is within +/–3 dB from about 60 Hz to 10.5 kHz at standard speed and from about 60 Hz to 5 kHz at EP speed. Flutter, distortion, and noise are much higher than in the Hi-Fi mode, but compared with other decks of this ilk, the VS-525U holds its own and then some.

Had the mistracking problems in the VHS Hi-Fi mode not surfaced, we would have given the Akai VS-525U exceptionally high marks, especially in light of its price and the number of features offered. Then again, a mistracking noise reduction system is nowadays usually the result of slightly misadjusted circuitry, not bad design. Perhaps some of the factors adjustments had slipped in the sample we tested. As it is, we think the deck deserves consideration by anyone whose video tastes lean more toward the cinematic than the musical and who can make good use of the Akai’s stereo TV reception and its convenient built-in power amplifier.

**CONTENTS**

- **Audio Frequency Response (Audio)**
- **Video Frequency Response (Audio)**
- **Audio Input Level Impedance (Audio)**
- **Video Record/Play Response (Audio)**
- **Tuner Section**
- **Additional Information**

**About the dBw**

We currently are expressing power in terms of dBw meaning power in dB with a reference 1 dBw of 1 watt. The accompanying table will enable you to see the advantages of dBw in comparing these products to other, for which you have no dBw figures.

<table>
<thead>
<tr>
<th>WATTS</th>
<th>dBW</th>
<th>WATTS</th>
<th>dBW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>0</td>
<td>32</td>
<td>1.5</td>
</tr>
<tr>
<td>1.25</td>
<td>1</td>
<td>40</td>
<td>1.6</td>
</tr>
<tr>
<td>1.6</td>
<td>2</td>
<td>50</td>
<td>1.7</td>
</tr>
<tr>
<td>2.0</td>
<td>3</td>
<td>63</td>
<td>1.8</td>
</tr>
<tr>
<td>2.5</td>
<td>4</td>
<td>80</td>
<td>1.9</td>
</tr>
<tr>
<td>3.2</td>
<td>5</td>
<td>100</td>
<td>2.0</td>
</tr>
<tr>
<td>4.0</td>
<td>6</td>
<td>125</td>
<td>2.1</td>
</tr>
<tr>
<td>5.0</td>
<td>7</td>
<td>160</td>
<td>2.2</td>
</tr>
<tr>
<td>6.3</td>
<td>8</td>
<td>200</td>
<td>2.3</td>
</tr>
<tr>
<td>8.0</td>
<td>9</td>
<td>250</td>
<td>2.4</td>
</tr>
<tr>
<td>10.0</td>
<td>10</td>
<td>320</td>
<td>2.5</td>
</tr>
<tr>
<td>12.5</td>
<td>11</td>
<td>400</td>
<td>2.6</td>
</tr>
<tr>
<td>16.0</td>
<td>12</td>
<td>500</td>
<td>2.7</td>
</tr>
<tr>
<td>20.0</td>
<td>13</td>
<td>630</td>
<td>2.8</td>
</tr>
<tr>
<td>25.0</td>
<td>14</td>
<td>800</td>
<td>2.9</td>
</tr>
</tbody>
</table>

**High Fidelity**
If you’re like most people who listen to audio cassettes, you’ve probably used a tape head-cleaner and felt pretty good about your conscientious attitude toward machine maintenance. Unfortunately, most cleaning cassettes allow contaminants to build up on the capstan/pinch roller assembly. It’s a situation that, if left uncorrected, can result in your valuable cassettes being “eaten” when they stick to, and wrap around, the pinch roller (a problem that’s even more common in car systems). Fortunately, Discwasher has a simple solution.

Discwasher’s Perfect Path™ Cassette Head Cleaner uses a non-abrasive tape to remove oxides from your tape heads. And our C.P.R.™ Capstan/Pinch Roller Cleaner uses an advanceable fabric and scientifically-formulated cleaning fluid to scrub away stickiness. Used together, they ensure good sound and “healthy” cassettes.

Now our System II™ approach combines both technologies in a single cassette, adding convenience to optimum tape deck performance. With regular use, your equipment (and your cassettes) will have a fighting chance for a long, happy life together. Isn’t that what you’d expect from Discwasher?

The makers of the famous D4+™ Record Cleaning System.
MITSUBISHI DRIVES THE

Mitsubishi believes that mobile electronics shouldn't take a back seat to home electronics. For that reason, we've created our Diamond Collection™ — an exclusive group of advanced components that puts future technology at your fingertips.

We spend more time listening to music in our cars than we do at home. Our DiamondAudio™ products put high-performance audio on the road...from high-powered, in-dash models specifically designed for most GM® domestic cars to the ultimate in auto sound — Compact Disc.

There's features you'd only expect from a company on the leading edge of electronic innovation. Our exclusive 3-Stage Tuner, FM Signal Processor and audible mode-confirmation of functions for ease of use and safety while driving. Even AM stereo on selected models.

It's no surprise that a company that was at the forefront of cellular communications technology has developed another technological coup: The DiamondTel® 55 cellular telephone. We dramatically reduced the transceiver, and integrated...
It's packed with intelligent features that make it the industry leader. Mitsubishi's DiamondSentry™ auto security systems share Diamond Collection's common denominator of quality and reliability.

They're much more than just alarms. DiamondSentry is a complete integrated security system with custom LSI circuitry that provides maximum features and compact size. DiamondSentry is easy to use and delivers superior protection for your vehicle.

Drive the future with Mitsubishi's Diamond Collection Mobile Electronics Products. Experience what's down the road. Today.

MITSUBISHI
MOBILE ELECTRONICS

© 1987 MITSUBISHI ELECTRIC SALES AMERICA, INC.
800 Biermann Court • Mount Prospect, IL 60056
(312) 298-9223
8885 Woodbine Avenue • Markham, Ontario L3R 5G1
(416) 475-7728
Lively! Informative! Entertaining! Authoritative! MUSICAL AMERICA, America's premier classical music magazine, brings you news and reviews from around the U.S. and the world on live classical music and dance. Since 1898, MUSICAL AMERICA has set the standard for authoritative coverage of the performing arts. And now it's once again available as a separate magazine. This exciting "new" bi-monthly carries the same stimulating columnists, critics, and writers as in the past. But you'll find much, much more! More pages! More coverage! Classical record reviews! New columnists!

**THE WORLD'S MOST IMPORTANT BOOK FOR PEOPLE INVOLVED IN THE ART AND BUSINESS OF MUSIC AND DANCE**

**ORDER NOW!**
- More than 650 large-size pages in length
- Fully indexed categorically and alphabetically
- Lists every orchestra in the U.S. and Canada, including number of concerts given, Musical Director and Manager, seating capacity, phone, address, and more
- Profile of Mstislav Rostropovich, "Musician of the Year"
- Complete listings of Choral Groups, Dance, Opera, and Performing Arts Series
- Opera companies' productions for the next two years
- 850 facilities listed by state and city
- Music publishers, schools, agencies, contests, foundations, and awards
- Addresses, phone numbers of more than 500 newspaper and magazine music critics

**THE MUSICAL AMERICA INTERNATIONAL DIRECTORY 1987 Edition**

- Yes, please send me soft-cover 1987 Directories for $60 each (including postage and handling on U.S. orders. Outside U.S. add $10 for surface mail, $20 for air mail). I'd prefer copies of the deluxe hard-bound edition for $100 each. (Outside U.S. add $10 for surface mail, $20 for air mail. Shipped free in a rugged, custom-designed, corrugated protective box.)
- I enclose $_. ALL ORDERS MUST BE PREPAID

P.O. BOX 6570, NEW YORK, N.Y. 10019

**SUPER SAVINGS OFFER**

MUSICAL AMERICA

America's premiere classical music magazine since 1898

YES! I'll save $6 off the single copy price.

☐ SEND ME 1 YEAR (6 ISSUES) OF MUSICAL AMERICA FOR JUST $30 ($6 OFF SINGLE COPY PRICE).

I'll save even more!

☐ SEND ME 2 YEARS (12 ISSUES) OF MUSICAL AMERICA FOR JUST $48 ($24 OFF SINGLE COPY PRICE).

BILL ME □ MC □ VISA □ PAYMENT ENCLOSED □

CARD NO. ____________ EXP DATE ____________

NAME ____________________________________________________
ADDRESS ____________________________________________________
CITY/STATE/ZIP ____________________________________________________

OR CALL TOLL FREE 1-800-247-5470

Offer subject to change without notice. Please allow 4-6 weeks for delivery. For delivery outside the 50 states add $6 per year. Pay with U.S. currency or international money order.

□ Yes, please send me______soft-cover 1987 Directories for $60 each (including postage and handling on U.S. orders. Outside U.S. add $10 for surface mail, $20 for air mail).
□ I'd prefer______copies of the deluxe hard-bound edition for $100 each. (Outside U.S. add $10 for surface mail, $20 for air mail. Shipped free in a rugged, custom-designed, corrugated protective box.)

I enclose $_.

ALL ORDERS MUST BE PREPAID

NAME ____________________________________________________
ADDRESS ____________________________________________________
CITY/STATE/ZIP ____________________________________________________
(IF FOREIGN) PROVINCE/COUNTRY ____________________________________________________

PLEASE ALLOW 4 TO 6 WEEKS FOR DELIVERY FROM RECEIPT OF YOUR ORDER.
Because of the many constraints posed by the car listening environment, choosing and installing an autosound system is a complex process. Your choice of cassette/receiver, speakers, and speaker locations will all be limited. But with a methodical approach, here broken down into five major steps, you'll get the best possible system for your car and budget.

Gordon Brockhouse was formerly an editor of Canadian audio and computer industry trade publications.
CHOOSE YOUR SOURCES

YOU’LL FIRST HAVE TO DECIDE ON THE PROGRAM sources you want to listen to. The current market offers a choice of AM and FM stereo radio, cassette tape, and, most recently, Compact Disc. Perhaps because of the high price of software, sales of car CD players have yet to take off, leaving cassettes and radio the preferred program sources. But as CD libraries expand and the sonic and ergonomic advantages of the system in a car become appreciated, this will change. At this year’s Winter Consumer Electronics Show, several manufacturers showed prototype Digital Audio Tape (DAT) players for the car, which could hit the market later this year.

The most popular type of car stereo component is called a cassette/receiver or a head unit; it contains an AM/FM tuner (stereo for both, in some models), a cassette player, and a small amplifier. Because of the bulk of even the smallest CD player mechanisms, an all-in-one cassette/receiver/CD-player has yet to be introduced (another factor inhibiting car CD sales). So if you want to play Compact Discs in the car, you must choose either an in-dash unit (with or without a tuner) or an under-dash unit. There are currently two magazine-loaded, trunk-mounted Compact Disc changers as well, one storing as many as 12 discs. Discs and individual tracks are selected from a control module installed in the dash. As an alternative to a dedicated car CD player, many recent cassette/receivers have switchable auxiliary inputs, enabling you to temporarily connect a portable player. For a system without an auxiliary input, you can buy an adapter that fits in the cassette bay, with cables that are connected to the CD player’s line outputs.

Your precise choice will be greatly influenced by the shape and size of the dashboard opening. Although many cars have standard DIN-sized (7- by 2-inch) cutouts, some auto makers use nonstandard openings to encourage sales of factory radios. Nonetheless, a wide range of aftermarket units is available.

MAKE A “WISH LIST”

WHEN YOU GO CAR STEREO shopping, you’ll be confronted with an array of competitive features and options. It’s a good idea to familiarize yourself beforehand with the range of features available so you won’t be overwhelmed by the variety.

Tuner features: While a few low-end models still use mechanical analog tuners, most car decks now incorporate electronic tuners with digital frequency displays (you might see the term “ETR”: electronically tuned receiver). ETRs tune in preset stations more precisely than analog tuners with mechanical presets and offer such useful convenience features as seek/scan tuning, which automatically tunes in strong stations. The number of radio presets varies from model to model with some capable of storing more stations than you probably can find. And some will automatically allocate presets to the best signals at the push of a button, a feature useful during cross-country drives. A local/DX (i.e., distant) switch, usually a standard feature, will help you find strong local stations that won’t fade rapidly as you drive away.

Most car units aspiring to high fidelity status contain additional FM reception-improvement circuitry that blends high frequencies on weak signals to achieve an optimum tradeoff between stereo separation and noise. Also, because of the nearly constant movement, tuners installed in cars are very susceptible to multipath and the related phenomenon of picket-fencing. Multipath distortion occurs when two versions of the same FM signal arrive at the receiving antenna simultaneously. Usually, one is a signal direct from the transmitting antenna, the other a reflection of that signal off a building or hill. The sonic result of the interference is an annoying tearing sound. Picket-fencing results from rapid fluctuations in multipath reception.

The few car components with “diversity tuning” use two separate tuners and antennas. The unit automatically and continuously switches to the other set to keep audible interference to a minimum. The operation of all these reception-dependent circuits plays a crucial role in the listenability of a car radio under poor reception conditions. Unfortunately, the radio’s ability to reject interference and to pull in stations is just about impossible to judge in a showroom setting. For the most reliable comparisons, you’ll have to examine equipment test reports or actually install the component in your car and take it out for a test drive.

If your favorite AM station broadcasts in stereo, you might consider a cassette/receiver with a stereo-AM decoder. There are two incompatible stereo-AM formats fighting for domination in the AM-broadcast market: Motorola’s G-QUAM system and the Kahn-Hazeltine system. The former seems to be winning, judging by the many stereo-AM tuners that incorporate only G-QUAM decoders, so if this feature is important (stereo AM is free from most of the FM reception problems mentioned above) check the system being used on your favorite stereo-AM station.

Tape player features: Ideally, the tape player should have a noise reduction system that can accurately decode the tapes you plan to play. Certainly, tapes recorded using DBX noise reduction are unlistenable unless played through a DBX decoder. With Dolby B and C, the compatibility problem is not so severe. Although the results cannot be described as optimum, a Dolby B–encoded tape can be played without decoding if you are willing to put up with slightly exaggerated high
frequencies (turning down the treble control will help). Some people prefer boosted highs for car listening. Likewise, Dolby C-encoded tapes can be played back with Dolby B noise reduction with approximately the same boosted highs resulting.

Most new tape units have switchable equalization (usually labeled "metal"), enabling them to play Type 4 metal and Type 2 (chromium dioxide or chrome-equivalent) tapes. The playback equalizations for these two tape types are identical, so the EQ switches labeled "metal" should be more accurately called 70-μs. Playing chrome or metal tapes using normal tape equalization will result in boosted high frequencies, which, again, some people prefer in the car. Playing a Dolby-encoded 70-μs tape without Dolby and with normal-tape EQ exaggerates the highs too much, however.

Auto reverse obviates manually flipping the tape over to hear the other side and is therefore a very popular (and safety-promoting) feature. But there is a price for this convenience: Because of the difficulty of maintaining ideal head alignment for both directions of tape travel, frequency response may not be the same in both directions. In fact, some high-end decks leave out auto reverse so that head azimuth can be adjusted to give consistent results.

A feature to insist on is key-off eject or key-off disengage. Respectively, these will eject the tape or disengage the cassette transport if you leave the cassette in the deck when you turn off the ignition. Without this feature, tapes can get crimped and pinch rollers can get deformed, causing speed fluctuations or jams.

Amplifier features: All cassette/receivers have volume and balance controls. Most have separate bass and treble controls, but a few low-end models offer only a single tone control. Loudness compensation is offered on a few units. Others offer special tone-balancing features designed to compensate to some degree for a typical car's acoustical qualities. Any of these may be useful, depending on how well your car's interior matches the compensation.

For multispeaker installations, you will need a front/rear fader to control the relative output of the front and back speakers. If you plan to add an external amplifier, equalizer, or other processor, you should look for a cassette/receiver with preamplifier outputs. Some have two sets, allowing their fader control to work with an external amp. Others have only one set of preamp outputs, requiring you to install an equalizer or other component with a fader in order to have full control of front/rear balance.

Other features: Some car audio manufacturers ignore ergonomics by employing ridiculously tiny buttons for important functions, such as station selection. Electronic volume control, which requires the user to maintain button pressure until a desired sound level is attained, is another ill-conceived feature. Your radio should distract your attention from the road as little as possible. You should be able to feel your way around a car stereo without having to look at it. Be sure to test any showroom model for this important characteristic.

Other common features that you may want to consider include a clock and a power antenna activator. Finally, many models are either removable or contain a built-in security system that renders the unit inoperable if it is stolen. For an in-depth discussion of these features, see the sidebar, "Anti-social Security."

Given restrictions of budget and vehicle type, it may not be possible to find a head unit that exactly matches your wish list, but careful shopping should turn up something suitable.

**SELECT SPEAKERS AND PLAN PLACEMENT**

AS IMPORTANT AS THE HEAD UNIT is, speakers and their installation will influence sound quality even more. Before auditioning, though, you have to determine where speakers can be installed in your car. Most new automobiles already have speaker compartments in the dash, the door panels, the side panels, the rear deck, or in a combination of these. Have a look at the car to see where speakers can go and what sizes can be accommodated. A good dealer should be able to tell you what kinds of speakers you can use and where they can be installed in your vehicle.

None of the possible locations is ideal. Sound from upward-facing dashboard speakers will be reflected backward from the windshield. Usually, though, there is room for only small-diameter speakers in a dashboard, resulting in limited bass output, and both driver and passenger will hear mostly the nearest speakers. This drawback also applies to door-mounted speakers. To avoid interference with window operation, door speakers usually are installed low in the panel. In this position, much of the high-frequency output will be absorbed by legs and clothing. Design compromise is sometimes necessary in order to achieve a sufficiently shallow mounting depth.

The rear deck has good possibilities for speaker mounting. But having the sound come from behind is unnatural, the stereo image is rarely good, and back-seat passengers may not appreciate having a speaker inches from their ears. Speakers can sometimes be installed in kick panels, so long as they don't interfere with operation of the foot pedals. The drivers can be pointed almost directly at the front-seat listeners. Unfortunately, this is one of the most awkward areas of the car for an installer to work in, and factory cutouts in this position are seldom included. The best—and definitely the most popular—solution will be some combination of front and rear speakers. Rear speakers will deliver good bass response; door or dashboard speakers will keep much of the
image in front of the listeners.

Since you can't experiment with speaker placement in a car the way you can at home, getting it right the first time out is essential. Buyers have a wide range of speaker styles to choose from. Full-range speakers use a single driver covering the full audio spectrum, but low- and high-frequency response is inevitably limited. Dual-cone speakers have a small "whizzer" cone in the center to assist treble response, but both cones use the same magnet and voice-coil assemblies, with resulting compromises. Small full-range and dual-cone units are available for tight spaces where nothing else will fit, but don't expect top-notch sound quality with such units.

Coaxial speakers have a fully separate tweeter suspended in front of the main driver, for the obvious benefit of high-frequency performance. Triaxial speakers suspend a tweeter and midrange driver in front of a woofer. Four-way single-package speakers are even available. More isn't necessarily better though: As with home systems, excellent performance is obtainable from two-way designs.

If your budget and vehicle will accommodate them, you might consider component speakers: physically separate woofers, midrange drivers, and tweeters, sometimes driven by separate amplifiers. For high-end systems, custom subwoofer enclosures can sometimes be built. It's easy to go overboard, though. A hodgepodge of speakers crammed into every available space will cost more, not only for speakers, but for amps, crossover, and installation charges. And the result may not sound as good as a simpler setup.

With hatchbacks and pickups, space for flush-mounted speakers is limited. Surface-mounted speakers necessarily have small enclosures, leading to a tradeoff between bass response and efficiency. A small enclosed speaker with good bass response will need a great deal of amplifier power to work properly.

After you've determined suitable speaker locations and possible speaker types, the next step is to audit different models. The process is no different from shopping for home speakers. You listen for the same things: overall smoothness, bass and treble extension, detail, spaciousness, and power handling. Concentrate on models from reputable manufacturers. Use the same source material from store to store, and try to ensure that the electronics used to demonstrate the speaker are consistent and realistic for your budget. The demonstration setup should be similar to anticipated speaker placement: your choice of front speakers arrayed in front of you, rear speakers behind.

Unfortunately, no store car-stereo demonstration environment can even approximate the acoustics of your car. Once installed in your car, the speakers you've chosen will invariably sound very different from the way they did in the dealer's showroom. It is safe to say, however, that speakers that sound better than average in the store will also perform better in your car, especially when it comes to things like bass response and the ability to handle large amounts of power.

besides the awkwardness of speaker placement, the car environment suffers from high ambient noise. Moreover, because of their frequency distribution, road and wind noises are more likely to obscure the music than background noise does in a home system. The reason car radios once sounded so bad was their inability to overcome such noise. Listeners would turn their radios up so that they could hear quiet passages. Loud passages would then be rendered hopelessly unlistenable by the inadequacies of the dashboard speaker and the overloading of the typical unit's 3-watt amplifier. On entry-level units, such low-power amps are still the norm. If you're listening mainly to newscasts and traffic reports, that will probably suffice. But for music, you'll need more power.

You must, however, read the fine print when comparing power ratings. Look for a rating in continuous or RMS watts per channel (over a specified bandwidth if possible) with specified distortion. There are other methods of rating power, all of which give higher figures. But because of the way they are derived, only continuous-power ratings can be usefully compared from brand to brand. A typical "high power" cassette/receiver offers around 10 watts (10 dBW) continuous power per channel. Remember also that you must at least double a continuous-power rating in watts to obtain a useful increase in maximum listening level: All other things being equal, a 12-watt (10.7-dBW) amplifier will play just as loudly as a 15-watt (11.8-dBW) model.

If you need more than 10 watts per channel—and almost everyone can benefit from more power—you'll have to install an external amplifier. This has an important bearing on your selection of a head unit. A booster—a power amp that works off the radio's speaker outputs—is one option for increasing the output power of a receiver. But instead of buying a cassette/receiver that incorporates an amplifier, you might consider a cassette/tuner plus external amplifier. A cassette/tuner has no amp of its own, but it will often offer refinements not available with the all-in-one cassette/receivers. If funds are limited, you might start with a cassette/receiver equipped with preamp outputs and use its internal amp until you're ready to add an external model. Or perhaps you can use the internal amp to drive door speakers, while an external amp drives heavier rear-deck speakers. In any case, you should consider the possibility of upgrading before you install even the first component.

If you choose component speakers, you'll need a crossover to direct sound to the appropriate drivers. It may be a passive crossover, which is connected between the amplifier and drivers, or an active crossover, which is connected be-
The crystalline clarity. The uncolored honesty of the Alpine Sound. Sound as transparent as alpine skies.

It is the sound promised by the digital medium of compact disc and fulfilled by two technologically and sonically superior tuner/CD players, the Alpine 7901 and 7902.

Through proprietary circuit design, state-of-the-art digital filtering, and refined optical tracking and suspension systems, the very essence of music comes to life before your ears, as never before.

And both the 7901 and 7902 feature the legendary T-1011™ - a tuner unsurpassed in discriminating signal from noise, in pulling out of thin air music's every subtle nuance.

Listen and you'll hear the purity. And discover the pure pleasure of the Alpine Sound.
Dear Customer,

From Drew Kaplan

Bad News For Escort

Escort has ignored DAK's second, one-on-one Maxon versus Escort radar challenge. And frankly, I'm fighting mad. I suppose they have a right to ignore me. But after referring to my challenge as only an "advertising gambit" and calling Maxon's radar detector an off-shore, primitive, and bottom-end unit, I'd think they'd be glad to wipe us out in a head to head duel to the death.

But, I'm really mad for two other reasons. I refer to Mad Reason 1. Road and Track Magazine held an independent general radar detector test in their September 86 issue. As far as I can see, Maxon beat Passport in Uninterrupted Alert, and Passport beat Maxon in Initial alert. Now to be fair, neither of us seem to have beaten the other by even 2 seconds. Frankly, I think you should win or lose by much. And, Maxon's $990 detector was tested against the $295 Passport, not the $245 Escort we challenged. What's interesting is that Road and Track had nice things to say about Passport and even about Escort, which wasn't even included in the tests any more.

Now, if you've been following DAK's challenge, you know we've only been challenging Escort. If you've read Road and Track's tests, you'll be amazed when you read Boardroom Reports, which I've reproduced right here. What's really interesting is that it's the exact same person in both publications.

Actually, Maxon did extremely well. Road and Track only used 'over hill' and 'around curve' tests because on straightaways the differences weren't worth the time it took. What's really interesting is that it's the exact same person in both publications.

Now, if you've been following DAK's challenge, you know we've only been challenging Escort. If you've read Road and Track's tests, you'll be amazed when you read Boardroom Reports, which I've reproduced right here. What's really interesting is that it's the exact same person in both publications.

Actually, Maxon did extremely well. Road and Track only used 'over hill' and 'around curve' tests because on straightaways the differences weren't worth the time it took. What's really interesting is that it's the exact same person in both publications.

1. Did you ever hear about the cure for dandruff that was developed in the middle-ages? It was the guillotine. And I think you should be aware of Cincinnati Microwave's anti-falsing cure for the Rashid VRSS Collision Avoidance System.

2. Did you ever hear about the cure for dandruff that was developed in the middle-ages? It was the guillotine. And I think you should be aware of Cincinnati Microwave's anti-falsing cure for the Rashid VRSS Collision Avoidance System.

3. Did you ever hear about the cure for dandruff that was developed in the middle-ages? It was the guillotine. And I think you should be aware of Cincinnati Microwave's anti-falsing cure for the Rashid VRSS Collision Avoidance System.

4. Did you ever hear about the cure for dandruff that was developed in the middle-ages? It was the guillotine. And I think you should be aware of Cincinnati Microwave's anti-falsing cure for the Rashid VRSS Collision Avoidance System.

Well, it's just as I've said in my challenge. I don't think there's much difference between Maxon's and Cincinnati's Radar detectors when it comes to sensing radar.

THE CHALLENGE GROWS

In view of the opinions stated in the article in Boardroom Reports about the $245 Escort, DAK hereby adds the $295 Passport to our challenge.

Mad Reason 1. Did you ever hear about the cure for dandruff that was developed in the middle-ages? It was the guillotine. And I think you should be aware of Cincinnati Microwave's anti-falsing cure for the Rashid VRSS Collision Avoidance System.

Mad Reason 2. Did you ever hear about the cure for dandruff that was developed in the middle-ages? It was the guillotine. And I think you should be aware of Cincinnati Microwave's anti-falsing cure for the Rashid VRSS Collision Avoidance System.

Well, it's just as I've said in my challenge. I don't think there's much difference between Maxon's and Cincinnati's Radar detectors when it comes to sensing radar.

THE CHALLENGE GROWS

In view of the opinions stated in the article in Boardroom Reports about the $245 Escort, DAK hereby adds the $295 Passport to our challenge.

Mad Reason 1. Did you ever hear about the cure for dandruff that was developed in the middle-ages? It was the guillotine. And I think you should be aware of Cincinnati Microwave's anti-falsing cure for the Rashid VRSS Collision Avoidance System.

A $20,000 Challenge To Escort

Let's cut through the Radar Detector Glut. We challenge Escort & Passport to one on one Distance and Falsing 'duel to the death' on the highway of their choice. If they win, the $20,000 check pictured below is theirs.

By Drew Kaplan

We've put up our $20,000. We challenge Escort, to take on Maxon's new Dual Superheterodyne RD-1 $990 radar detector on the road of their choice in a one on one conflict.

Even Escort says that everyone compares themselves to Escort, and they're right. They were the first in 1975 to use superheterodyne circuits and they've got a virtual stranglehold on the magazine test reports.

But, the real question today is: 1) How many feet of sensing difference, if any, is there between this top of the line Maxon Dual Detector and Escort's Passport? 2) Which unit is more accurate at interpreting real radar versus false signals?

So Escort, you pick the road (continental U.S. please). You pick the equipment to create the false signals. (Don't forget our $10,000 Rashid challenge). And finally, you pick the radar gun.

Maxon and DAK will come to your...
Challenge Continued

And oh yes, we’ll have the $20,000 check (pictured) to hand over if you beat us by more than 10 feet in either X or K band detection with the Escort, or by 2 seconds at 55mph with the Passport.

**Bob Says MAXON IS BETTER**

Here’s how it started. Maxon is a mammoth electronics prime manufacturer. They actually make all types of sophisticated electronic products for some of the biggest U.S. Electronics Companies. (No, they don’t make Escort’s).

Bob Thetford, the president of Maxon Systems Inc., and a friend of mine, was explaining their new RD-1 anti-falsifying Dual Superheterodyne Radar detector to me. I said “You know Bob, I think Escort really has the market locked up.” He said, “Our new design can beat theirs.”

So, since I’ve never been one to be in second place, I said, “Would you bet $20,000 that you can beat Escort?” And, as they say, the rest is history.

By the way, Bob is about 6’9’’ tall, so if we can’t beat Escort, we can sure scare the you know what out of them. But, Bob and his engineers are deadly serious about this ‘duel’. And you can bet that our $20,000 is serious.

**We ask only the following.**

1) The public be invited to watch. 2) Maxon’s Engineers as well as Escort’s check the radar gun and monitor the test and the results. 3) The same car be used in both tests. 4) We’d like an answer from Escort no later than July 31, 1987 and 60 days notice of the time and place of the conflict. 5) If Escort can prove that there are 1,000, or even 500 Rashad units in operation, we will present them with the appropriate $10,000 or $5,000 check at the beginning of the conflict. And, 6) We’d like them to come with a $20,000 check made out to DAK if we win.

**HOW’S THIS FOR FAIR**

Cincinnati Microwave will be deemed the winner and given the check if either Escort beats Maxon by 10 feet in both uninterrupted and initial alerts, OR if Passport beats Maxon by 2 seconds at 55mph in both uninterrupted and initial alerts. So, DAK wins only if we beat both Escort and Passport.

A tie will exist only if both the $295 Passport and $245 Escort fail to beat Maxon’s $99.95 Dual Superheterodyne RD-1 Radar Detector.

**SO, WHAT’S DUAL SUPERHETERODYNE?**

Ok, so far we’ve set up the conflict. Now let me tell you about the new dual superheterodyne technology that lets Maxon leap ahead of the pack.

It’s a technology that tests each suspected radar signal 4 separate times before it notifies you, and yet it explodes into action in just 1/4 of one second.

Just imagine the sophistication of a device that can test a signal 4 times in less than 1/4 of one second. Maxon’s technology is mind boggling. But, using it isn’t. This long range detector has all the bells and whistles. It has separate audible sounds for X and K radar signals because you’ve only got about 1/3 the time to react with K band.

There’s a 10 step LED Bar Graph Meter to accurately show the radar signal’s strength. And, you won’t have to look at a needle in a meter. You can see the Bar Graph Meter with your peripheral vision and keep your eyes on the road and put your foot on the brake.

So, just turn on the Power/Volume knob, clip it to your visor or put it on your dash. Then plug in its cigarette lighter cord and you’re protected.

And you’ll have a very high level of protection. Maxon’s Dual Conversion Scanning Superheterodyne circuitry combined with its ridge guide wideband horn internal antenna, really ferrets out radar signals.

By the way, Escort, we’ll be happy to have our test around a bend in the road or over a hill. Maxon’s detector really picks up ‘ambush type’ radar signals.

And the key word is ‘radar’, not trash signals. The 4 test check system that operates in 1/4 second gives you extremely high protection from signals from other detectors, intrusion systems and garage door openers.

So, when the lights and X or K band sounds explode into action, take care, there’s very likely police radar nearby. You’ll have full volume control, and a City/Highway button reduces the less important X band reception in the city.

Maxon’s long range detector comes complete with a visor clip, hook and loop dash board mounting, and the power cord cigarette adaptor.

It’s much smaller than Escort at just 3 1/2” Wide, 4 1/4” deep and 1 1/2” high. But, it is larger than Passport. It’s backed by Maxon’s standard warranty.

Note from Drew: 1) Use of radar detectors is illegal in some states.

2) Speeding is dangerous. Use this detector to keep you safe when you forget, not to get away with speeding.
tween the head unit (or equalizer) and amplifiers. Because they require separate amps for each frequency range, active crossovers are appropriate only for relatively expensive installations. One common application is for a subwoofer. An active crossover will be used to divide frequencies below and above 125 Hz (or thereabouts). The subwoofer will be driven by a dedicated power amplifier and the other speakers by another. High, middle, and low frequencies in the main speakers will be divided by a conventional passive network. Many preamp/equalizers and some amps have built-in crossovers for subwoofers, so if you're planning to add a subwoofer, you should consider one of these models.

Remember, all components have to work as a system. In configuring a setup, you have to consider not only the components you'll buy first but also those you plan to add later, if only to avoid incompatibilities or redundancies.

### ARRANGE INSTALLATION

**FOR BEST PERFORMANCE, A CAR STEREO SYSTEM HAS TO BE INSTALLED PROPERLY. UNLESS YOU'RE AN EXPERT YOURSELF, IT'S BETTER TO LEAVE INSTALLATION TO SOMEONE WHO IS.**

There are numerous mistakes that can be made, ranging from the innocuous (like cosmetic damage to the interior of the car) to the life-threatening.

Bass response can be compromised by wiring the speakers out-of-phase or by failing to create an effective seal between a low-frequency driver and its mounting surface. A simple mistake like reversing hot and ground leads can destroy power-supply ICs and will usually void the warranty. Incomplete or improper ground loops will cause a variety of whirring and ticking noises. Some autos are very prone to ignition noise; a good installer will be able to install a trap to eliminate this problem.

But there are reasons other than performance for choosing an installer carefully. Particularly when custom work is being done, there is a real risk that the car's appearance will be affected. Wires that could be concealed may be left exposed. Holes for door speakers may be sloppily cut, leaving frayed material. Components may be inappropriately placed. An under-dash amp or equalizer may be installed in such a way that the door or passenger risks knee damage. A door speaker may interfere with operation of the window crank.

And there are important safety issues. Consider this real-life horror story told by a major autosound manufacturer. Dissatisfied with the performance of his $3,000 car-stereo system and unable to get satisfaction from the dealer, the owner turned to the manufacturer for help. Apparently, whenever he drove over even a minor bump, the amplifiers would shut off momentarily, causing the subwoofers to emit a "motorboating" sound. Other than that, he would hardly have known the subwoofers were there, as they were barely audible in normal operation. The system also emitted other annoying noises at times.

It turned out that the installation job was an abomination. The subwoofer enclosures were made of wood the quality of orange crates and were improperly vented for the drivers used. The subwoofers and 6- by 9-inch full-range speakers were installed on the rear deck. But because the fiberglass shelf was not reinforced, it buzzed and flexed along with the music. Under the rear seat was a maze of extra speaker wire and signal cable. In addition to costing far more than necessary, the extra cable made the system more susceptible to radio frequency interference, alternator whine, and ignition noise.

A more serious problem was the installer's failure to use any kind of fuse or circuit breaker in the direct tap from the battery to the bank of power amplifiers in the trunk. And though the amps were appropriately grounded to a single point, an aluminum screw—not an ideal conductor—was used for the ground. The connecting lugs were the wrong size, so the installer put in a washer. Unfortunately, he used a black-anodized washer, another poor conductor. As a result, grounding of the amplifiers was interrupted whenever the car went over a bump, momentarily depriving them of power—hence, the motorboating.

Charred areas around the ground point indicated the most serious problem: arcing due to poor conduction. That could have been fatal to the owner, because an exploratory screw had punctured the gas tank. The screw was left in place to prevent leaking, but gas fumes could be smelled in the trunk. Add an electrical spark, and you have a recipe for disaster.

This story has a happy ending, however. Despite having to pay another $800 to replace damaged subwoofers and have the system reinstalled properly, the owner was delighted with the final results. More important, he lived to tell the tale. The store that sold and installed the original system has since gone bankrupt.

There are several morals to our tale, which admittedly is an extreme case. First of all, having a system professionally installed is no guarantee of good work: You must choose an installer with as much care as you use to choose the components. And since quality installation takes time, expertise, and special tools, you should expect to pay for it. For elaborate installations involving extra amplifiers and custom speaker enclosures, plan to be without your car for a couple of days. That's how long it will take to do the job properly. Care must be taken even on routine jobs involving a radio and a single pair of speakers installed in factory cutouts. View with caution any promise of free installation.

Most important, check out the ability of the seller to do a good installation. Is the installation shop clean, orderly, and well equipped? Get referrals from friends or examine other
installations done by the shop. In addition to evaluating sound quality, examine the neatness of the job. Are there loose wires that could be shorted by passenger traffic, or are all the cables properly routed and concealed? Does the installation look amateurish, or does the stereo look as if it were installed in the factory?

Installation is the final ingredient in the recipe for highway hi-fi. If you audition and place speakers carefully, give careful thought to the features and program sources you want, assemble the components into a well-balanced system, and have it professionally installed, you'll add a lot of pleasure to your time behind the wheel.

ANTISOCIAL SECURITY

A s anybody who's ever shelled out five hundred bucks for a premium front end—only to have it immediately stolen—can attest: Car stereo theft is all too often a crime that does pay. Security is the name of the game, and how well you play it can mean the difference between hearing your favorite tape or CD during tomorrow's commute or being confronted with a gaping hole in the dash. Taking steps to protect your investment can mean not only peace of mind but perhaps a savings on your insurance premium as well.

Fortunately, there are a number of options available for fighting back. But before you can choose the best one, you must decide exactly what it is you are trying to protect: the car itself or the dashboard contents. Car alarms have become sophisticated enough to deter all but the most seasoned criminals, but they do not come cheap. Protecting your car is beyond the scope of this column, but I can give you three pieces of advice. First, the alarm will stand a better chance of succeeding if it sounds instantaneously, rather than having an "entrance delay." Therefore, I recommend a remote keypad/disarm alarm—why give a thief a 20-second head start? Second, if you are having the installation done professionally, shop around, since prices can vary dramatically from dealer to dealer for the same coverage, sometimes even for the same alarm. The biggest variable is usually labor. Expect to pay a minimum of $100 for all but the simplest installation—but it can, and usually does, go quite a bit higher.

Third, check with your insurance company to see whether a discount is offered for a particular kind of security system. Some states now mandate a discount for qualifying alarms; others have legislation pending.

If you're not going to protect the whole car, you might still be able to hold on to your radio. The option of choice in metropolitan areas seems to be the new removable DIN-size format featuring a permanently installed and wired sleeve from which the receiver can be extracted and reinserted with a minimum of fuss. Made popular by Kenwood, removable front ends are now offered by practically every major manufacturer. If this option appeals to you, but you already have big bucks invested in a new front end, you may be able to retrofit it with a Bensi Box, which—if it fits in the dash (in my experience, it frequently doesn't)—serves both as a permanent sleeve and a masking shroud for the radio.

One of the nicest things about the slide-out format is the absence of a conspicuous radio for the window-shopping thief to steal, which could spare you a broken window. It also offers the possibility of buying one high-quality unit for use in several cars. Possible drawbacks include the hassle of taking the radio with you. If you don't and the unit is stolen, which obviously would be quite easy, expect the insurance company to deny coverage, since the radio was not a permanently installed part of the vehicle.

A security measure with great promise is secret coding. Currently in use by Clarion, Phillips, Pioneer, Nakamichi, and others, coding requires the entry of a multidigit number in order to activate the unit at any time after the power is disconnected and then reconnected. Without the appropriate code, the device is inoperable and therefore worthless. After several erroneous entries, most units will not accept further entries for a long time, to prevent "hot wiring" and exhaustive testing of all possible code numbers. Currently, however, the average thief could not be expected to know the significance of a deck marked "Secret Code" until he's already done his dirty work. There's not much chance of his giving it back at that point. A special note to both consumers and retailers: If you lose or forget your code number, it's an expensive non-warranty procedure for the factory to change it (if it can be done), and most likely you'll have to present some proof of purchase.

Sony's Disc Jockey established a new category for secure car audio systems by putting its Compact Disc changer mechanism in the trunk. The compact size of the Disc Jockey's remote allows it to be tucked out of sight. Alpine's new cassette and disc changers also put their works in the trunk, but their optically coupled control/tuner unit must be installed in dash. Should a thief decide to try his luck, he might not realize that he is getting only half the package until he's already broken in, if then. Nevertheless, you can expect more trunk-mounted systems in the future.

Quite a few in-dash receivers are available with either a built-in alarm or "alarm-ready" wiring, which requires an optional module. Most are triggered when a circuit is broken, e.g., when a wire is cut or jared loose. The problem I see with this arrangement is that the burglar has almost finished his job by the time the alarm sounds, and all but the most timid would probably remain long enough to finish what he has started. Still, some protection is better than none.

If you don't have the money to spend on any of the techniques mentioned above, there are some inexpensive options that are sure to fit into your budget. You can make your radio look either like a cheap factory AM model, like it's already been stolen, or like nothing at all (by hiding it). Any of these cover-up products can be added for less than $10. Some of them are quite flimsy and probably wouldn't fool anyone. Others won't fit well enough to do the job. The opposite, and perhaps a bit more effective, approach is to stuff a conspicuous cassette-mechanism lock into the mow of your receiver. All but the first-time thief will recognize this as being more trouble than it's worth, since forcible removal of the lock will damage the cassette transport—not bad for $20-30. An Audio Safe combines these two techniques by obscuring the receiver and locking it up as well. (As a bonus, an Audio Safe should also keep the elements from infiltrating your front end.) And finally, it's worth mentioning that another high-ticket accessory, the increasingly popular radar detector, is fast replacing car stereo as a thief's favorite target.

—Jay C. Taylor

MAY 1987 43
Why the Carver M-500t Magnetic Field Power Amplifier has helped begin an industry trend and how it has stayed ahead of its inspired imitators.

Twice in the last decade, Bob Carver has taught the high fidelity industry how to make amplifiers that give you better performance and value. Both times his bold lead has attracted followers. Still, as evidenced by the current release of the M-500t, Carver sets standards yet unequalled in the audio community.

With its astonishingly high voltage/high output current and exclusive operation features, it is a prime example of why Carver remains the designer to emulate:

- Continuous FTC sine-wave output conservatively rated at 250 watts per channel.
- Produces 600 to 1000 watts per channel of dynamic power for music (depending on impedance).
- Bridging mode delivers 700 watts continuous sine-wave output at 8 ohms.
- High current Magnetic Field power supply provides peak currents up to ± 100 amps for precise control of voice-coil motion.
- Designed to handle unintended 1 ohm speaker loads without shutting down.
- Equipped with infinite resolution VU meters.

And yet its Federal Trade Commission Continuous Average Power Rating is 250 watts per channel into 8 ohms. The gulf between the two power ratings represents Bob Carver's insistence that amplifier design should fit the problem at hand. That problem is reproducing music with stunning impact, not simply satisfying a sine wave test which doesn't even include speakers or sound sources. Hence the seeming gulf between the two ratings.

Bob reasoned that since music is composed of three basic types of power waveforms, those types of waveforms are what an amplifier should be designed to satisfy.

First there are instantaneous peak transients — the sudden smash of cymbals, drums, or the individual leading edge attack of each musical note. While these waveforms last less than 1/100 of a second, they form the keen edge of musical reality which must be present if you are to realize high fidelity. Though momentary, they also demand a tremendous amount of amplifier power.

Directly following instantaneous transients are combinatorial musical crests of demand that come from multiple instruments and their harmonics. These long term power demands may last up to several seconds but usually come and go in less than a second. And yet they can tax anything but an exceptionally powerful amplifier.

The third type of power demand is represented by the average power contained in the music, and is approximately one third to one half of the FTC continuous power rating. At extremely high output current levels, the Carver M-500t not only delivers over 700 watts of instantaneous peak power for instantaneous transients, but can deliver over 600 watts RMS of long term power for demands lasting up to several seconds. The M-500t provides more power, more current and more voltage than any comparably priced amplifier ever offered.

THE MAGNETIC FIELDAMPLIFIER
VS. CONVENTION.

Audiophiles, critics and ultimately other manufacturers have each accepted the wisdom of Bob Carver's fresh approach to delivering power in musical terms. Yet only Carver has so elegantly translated theory into practice.

Rather than increase cost, size and heat output with huge storage circuits, Magnetic Field Amplification delivers instantaneous high peak and long term power from a small but powerful Magnetic Field Coil. The result is an amplifier capable of simultaneous high current and high voltage that can do sonic justice to the dynamics of Compact Discs and audiophile records in a compact, cool-running design. An amplifier costing considerably less than the ultra-esoteric models which figured significantly into the genesis of its circuitry. For a reprint of the full story of its development as well as a catalog of Carver high fidelity audio components please call or write to us.

Figure 1 above shows a $7,000 pair of ultra-esoteric mono amplifiers. No expense was spared on their admittedly magnificent but still conventional design and construction.

Figure 2 shows the massive toroid output transformers contained in these prestigious audiophile designs. At 10% regulation, their output current is ± 50 amperes. All conventional amplifiers are condemned to using this type of design.
Figure 2 also shows the patented Magnetic Field Coil employed in the Carver M-500t. Its output current is ± 100 amps at 10% regulation!

![Figure 2]

**Distinguishing Features of The Carver M-500t.**

Power is mandatory for dynamic impact and musical realism. And yet power requires control and finesse. While the Carver M-500t isn't the only amplifier to deliver adequate output, it is one of the few that temper force with protection circuits beneficial to both the amplifier and your loudspeaker system.

- **These include DC offset, short circuit power interrupt as well as two special computer-controlled speaker monitor circuits which protect against excessive high frequency tweeter input and an overall thermal overload.**

- **The Carver M-500t continuously displays power output through dual, lighted infinite resolution VU-ballistic meters. Meters which can react to musical transients as brief as 1 millisecond.**

- **The M-500t is quiet. Inside and out. Its circuitry has the best signal-to-noise ratio of any production amplifier. Better than -120dB. And, in spite of its massive output capability, the M-500t does not require a noisy fan to dissipate heat. Thanks to the cool running Magnetic Field Amplifer circuitry.**

- **No other amplifier in the M-500t's price or power ranges is capable of handling problematic speaker loads as low as 1 ohm. Whether required by certain brands of speakers, or inadvertently derived by pairing too many low impedance speakers at one set of output terminals, all conventional amplifiers simply shut down or blow their fuses when faced with this condition.**

- **In stereo use, both channels of the M-500t can actually borrow from each other during unequal output demands. In addition, Carver amplifiers have pioneered phase inversion circuitry which takes advantage of the in-phase (mono) characteristics of bass to essentially double available power supply current at low frequencies.**

- **Finally, the Carver M-500t can be used in a bridged mode as a 700 watt RMS per channel mono amplifier without any switching or modification.**

**Music is the final proof.**

Were you to buy a power amplifier solely on features and performance specifications, painstaking comparison would inevitably lead you to the Carver M-500t.

But we are sure that your final judgment will be based on musicality. It is here that the M-500t again distinguishes itself.

Bob Carver has carefully designed the M-500t to have a completely neutral signal path that is utterly transparent in sonic character. The result is more than just musical accuracy. It means a total lack of listener fatigue caused by subtle colorations sometimes exhibited by conventional amplifier designs, regardless of their power rating.

It means a veil is lifted between you and your musical source as the most detailed nuances are revealed with realism, believability and delivered with stunning impact.

**Visit your Carver Dealer for a Surprising Audition.**

We invite you to audition the Carver M-500t soon. Against any and all competition. Including those who are only now embracing the principles which Bob Carver has refined over the last several years.

We doubt that you will be surprised when the M-500t lives up to the claims made in this advertisement. What will surprise you is just how affordable this much power, musicality and accuracy can be.

**Specifications:**
- Power: 251 watts per channel into 8 ohms 20Hz to 20kHz, both channels driven with no more than 0.15% T.H.D. Instantaneous Peak Power, 1000 watts into 2 ohms, 950 watts into 4 ohms, 600 watts into 8 ohms. Long-term RMS Power for Music, 500 into 2 ohms, 450 into 4 ohms, 300 into 8 ohms, 1000 watts bridged mono into 4 ohms, 950 watts bridged mono into 8 ohms. Bridged Mono RMS Continuous Power, 700 watts continuous into 8 ohms. Noise - -120dB IHF Weighted.
- Frequency Response: ± 0.3dB 1Hz - 100kHz.

**Carver**

**Powerful**

**Musical**

**Accurate**

P.O. Box 1237 Lynwood, WA 98036

Distributed in Canada by Evolution Technology
ROAD WARRIORS 1987

Some of the loudest sounds at the Winter Consumer Electronics Show emanate from autosound demo vehicles on and off the show floor. Nobody actually sits in these vehicles, but the sound (not to mention the sensation) does grab your attention. And so will this year’s new auto-sound components. Compact Disc is still a hot item, as more manufacturers find a way to squeeze a player and a tuner into a single in-dash chassis. Speaking of “hot” items, their deterrence features, such as the slide-out chassis, are becoming commonplace. DAT players are in the development stage, but their fate is tied to that of their home counterparts. Our resident autophile, Jay C. Taylor, reports.

Christopher J. Esse

Digital Travels

C A R  C O M P A C T  D I S C  P L A Y E R S  C O N T I N U E  T O
draw attention in disproportion to their meager share (so far) of the 12-volt market. Alpine, in particular, showed a renewed commitment to the format with three models. Heading the list is the 5950 ($1,500), a 12-disc changer that ends the Sony Disc Jockey monopoly (SONY’s changer uses a 10-disc magazine). Features distinguishing the new Alpine include fiber-optic coupling of the in-dash controls to the trunk-mounted changer mechanism and a programmable memory card that allows disc and track selections to be made in advance (presumably when you load the magazine) at a remote location. In addition, the memory card acts as a coded antithelt device: Upon insertion, it will power up the system only if its factory code matches that of the control unit. And if the power has been disconnected, a four-digit number matching the factory code must be entered before the unit will operate again. So if the unit and its memory card are removed (read “stolen”), only the owner will be able to make the system work. Other new digital offerings from Alpine are two in-dash CD/tuner combos, the full-featured 7902 ($850) and the more basic 7901 ($650). Each CD/tuner is housed in a single 7-by-2-by-5 3/8-inch (DIN-size) chassis for ease of installation.

Can’t afford even the least expensive car CD system? Try hooking up Sony’s D-10 portable CD player, which has an entire package of accessories available for mobile use. There’s nothing new about the cigarette lighter power cord or the cassette adapter (Recoton has offered one for some time), but Sony’s new gooseneck mounting stalk ($75) with its own suspension system breaks
new ground while possibly solving the two biggest problems with car-bound portables—mistracking and placement. You might recall Blaupunkt's gooseneck equalizers, which similarly attacked the problem of location.

Kenwood displayed a new CD/tuner, the KDC-9R ($850), but attracted more attention with its prototype car DAT player. Don't expect to see a mobile DAT unit anytime soon, however, regardless of Alpine's stated intentions. There are still some technical obstacles and legislative concerns. Clarion also showed a prototype player-only unit, but it announced plans to bring in a combination DAT/tuner, having evidently learned from the unpopularity of CD-only models. When car DAT does make its debut, look for a price above $1,000 and few or no prerecorded tapes.

Of perhaps greater significance are two new half-DIN-size products, a format previously available only in equalizers and a couple of amplifier models. Alpine's 1341 tuner ($220) is designed to integrate with the in-dash control unit of its 5950 CD changer (also half-DIN); Sony's XK-8 ($270) is a cassette player similarly conceived for use with the head-end of its two-piece CDX-R88 CD/receiver (reviewed in this issue). The prototype XK-8 we saw, however, did not include Dolby noise reduction, an omission that immediately dismisses it from serious consideration for a true autophile system. It is not clear whether the Alpine CD changer, add-on tuner, and Sony's cassette player could be patched together into one have-it-all system, but the half-DIN-size format promises greater flexibility in mixing and matching the best car audio components from each category. This is long overdue.

**TAKE-AWAYS**

**WHILE HALF-DIN PRODUCTS MAY BE HARD TO come by for now, removable DIN models are flooding the market. They can be stowed in the trunk (stealthily) or taken along when you leave your car. Leading the field is Kenwood, which introduced its fourth and least expensive model, the KRC-333 cassette/receiver ($340). Denon's top slide-out, the DCR-5520 cassette/receiver ($600), features a dual-azimuth head, a logic-controlled tape transport, and a front-panel input jack for a portable CD player. And at least four other manufacturers have entered this burgeoning category: Pioneer, Alpine, Yamaha, and Sansui. The latest Supertuner cassette/receiver from Pioneer, the KE-3050QR ($320), is positioned at the low end of the extractables market. Yamaha is launching two models, each available with an optional ($50) mounting bracket for slide-out installation: the YCR-50 cassette/receiver and the YCT-40 cassette/tuner, with approximate prices of $450 and $400, respectively. All three of Alpine's new receivers include a cassette door that closes completely and a mechanism to release the capstan and pinch roller when the handle is lifted for removal. Both features help prevent damage while the units are stored. The 7283 ($400) is a high-power model with

The prototype XK-8 we saw, however, did not include Dolby noise reduction, an omission that immediately dismisses it from serious consideration for a true autophile system. It is not clear whether the Alpine CD changer, add-on tuner, and Sony's cassette player could be patched together into one have-it-all system, but the half-DIN-size format promises greater flexibility in mixing and matching the best car audio components from each category. This is long overdue.

**TAKE-AWAYS**

**WHILE HALF-DIN PRODUCTS MAY BE HARD TO come by for now, removable DIN models are flooding the market. They can be stowed in the trunk (stealthily) or taken along when you leave your car. Leading the field is Kenwood, which introduced its fourth and least expensive model, the KRC-333 cassette/receiver ($340). Denon's top slide-out, the DCR-5520 cassette/receiver ($600), features a dual-azimuth head, a logic-controlled tape transport, and a front-panel input jack for a portable CD player. And at least four other manufacturers have entered this burgeoning category: Pioneer, Alpine, Yamaha, and Sansui. The latest Supertuner cassette/receiver from Pioneer, the KE-3050QR ($320), is positioned at the low end of the extractables market. Yamaha is launching two models, each available with an optional ($50) mounting bracket for slide-out installation: the YCR-50 cassette/receiver and the YCT-40 cassette/tuner, with approximate prices of $450 and $400, respectively. All three of Alpine's new receivers include a cassette door that closes completely and a mechanism to release the capstan and pinch roller when the handle is lifted for removal. Both features help prevent damage while the units are stored. The 7283 ($400) is a high-power model with

Dolby B; the 7284 ($500) adds a logic-controlled tape transport and backlighting; and the 7285 ($550) offers Dolby C and Alpine's proprietary HL-TAC tape head. A Cordura carrying case is available as an option for each. And finally, Sansui has two high-power, auto reverse models, the RX-5100 ($450) and the Dolby B-equipped RX-7100 ($550). the CXQ-1 allows for as many as four amps to handle the upper frequencies. Mid- and high-frequency output is available for both front and rear speakers, but the crossover points need not be the same. For full-range speakers, the midband filter is simply switched to "flat." Output for all five bands—front and rear mid, front and rear...
high, and subwoofer—is individually adjustable for sensitivity and gain matching. A 50-Hz boost of up to 10 dB can be added to the subwoofer or to both the subwoofer and rear-channel outputs. Resonance (at 200 Hz) can be controlled with a midbass attenuation switch for both front and rear outputs.

One of the most unusual processors is Audio Control’s Epicenter ($180), a 12-volt version of the company’s home model Phase Coupled Activator (test report, January 1986). Detecting trace elements of bass lost in the recording process, the Epicenter re-constructs the bottom end to recapture the impact of the original material. The processor itself can be remotely mounted and operated by a small control unit placed in an accessible location.

If dash space is at a premium, you can still have seven bands of equalization and a fader to balance two amps with Alpine’s S330 ($160), which can be mounted with doublesided tape or Velcro or stowed up to seven feet away from the main installation. Connection is via a mini-DIN plug. Changes in setting still must be made on the actual unit, however.

ADS unveiled just the second parametric equalizer in autosound, the EQ-1 ($200). Meant to be installed in the trunk, the EQ-1’s settings are not user-adjustable but instead are preset for eight front-channel and eight back-channel frequencies with plug-in ADS modules, some of which are designed for the acoustics of specific vehicles. Generic modules are available as well, with additional custom EQ modules planned. Another ADS piece, the 642-CS1 ($230), functions not only as an active crossover but as a switching device for separate cassette/tuner and CD head units as well. Its most unusual function, however, is Constant Bass processing, which enables the installer to add signals below 85 Hz to front or back satellite speakers. The amplitude of these low frequencies can be individually adjusted to prevent overdriving the woofers.

Altec Lansing broadened its base with electronic products, including the ALC-10 crossover ($120) and two amplifiers. The ALC-10 has a subwoofer output with adjustable low-pass frequency, a fixed 100-Hz high-pass output, and a full-range output. What’s unique about this crossover is its adjustable dynamic equalizer control, which boosts bass response at low listening levels...
Before you listen to a Jensen JXL, we suggest warming up with something a little less exhilarating.

If you’re about to buy car speakers or a car receiver, it’s important to warn you about Jensen® JXLs. The sound of a JXL is so dynamic that if you’re not prepared for it, listening to one could be dangerous.

**Exciting sound from exciting speakers.**

What could be more exciting than a JXL? Each model is compact disc ready and handles the accurate sound of today’s digital recordings with ease.

They pack a lot of power, too. Polycarbonate dynamic cone tweeters and long throw woolers give the JXLs up to 175 watts of peak power handling. And thanks to their very efficient design, the JXLs get plenty of volume out of any receiver.

**Listen to a JXL receiver and you’re ready for anything.**

If our speakers don’t take your breath away, our receivers will. They’ve all been designed with the most advanced technology money can buy. Features like Dolby "B," Auto Reverse Tape Transport, Phase Locked Loop tuning, Seek, Scan and Automatic Program Control.

In the unlikely event you need even more excitement, the JXL-45 and JXL-55 have Pre-Amp outputs and compact disc player inputs. So you can add an amplifier or CD player to your system whenever you’re ready.

So, go jump off a building. Put your head in a lion’s mouth. Do whatever it takes to prepare yourself for the exhilarating sound of a JXL.

Then go down to your local Jensen dealer and experience the real thing.
JENSEN JTE-802

Pick-up and car speaker system

($560) offers 240 watts (23.8 dBW) total for either six-, five-, four-, or three-channel applications. Multichannel monster amp honors go to Soundstream, however, whose MC-500 (price unavailable) has 500 watts (27 dBW) available to divide between four, three, or two channels. A Low Frequency Compensation circuit allows for a linear boost of as much as 6 dB centered anywhere between 35 and 280 Hz. Another significant Soundstream introduction is the Class-A-50 ($350), not surprisingly a Class A amplifier rated at 25 watts (14 dBW) per side.

SPECIALTY SPEAKERS

Another product category for which there seems to be no shortage of suppliers is pickup-truck and hatchback speaker systems. Some big names are coming into a market previously dominated by a number of smaller companies. Cerwin Vega and Yamaha showed products for “dealer comment,” but from the looks of it, finished goods will not be far behind. Jensen calls its JTE-802 ($300) The force, a pair of 8-inch two-way enclosures that fit behind the seat of a van or pickup and use a vent to direct the bass under the seat. Sparkomatic introduced a 6½-inch two-way, the SK-480 ($60), to capture the low end of the market. And Pioneer has two new models, the diminutive TS-1RX5 ($150), a 5-inch two-way bass reflex system, and the TS-1RX5 ($270), a 6½-inch two-way with passive radiator and horn tweeter.

In the bass-own department, Southern Audio Service showed one-piece versions of its popular 6½- and 8-inch Bazookas, designed to look at home in the rear of a hatch-back, while ADS entered the bass box business at the high end with two enclosure-mounted subwoofers: The SB-7 ($400) has a pair of 7-inch drivers, and the SB-10 ($650) has 10-inch twins. Blaupunkt’s SUB-W100 ($300) is its first powered subwoofer system and has a built-in 80-watt (19 dBW) amp to drive two 5½-inch woofers. About the size of a shoe box, the SUB-W100 can easily be mounted under the rear deck; a complementary crossover, the BXN-Sub 07 ($100) is also available. Stillwater Designs produced the 2 by 10, an enclosure with two 10-inch woofers and a foam gasket to fire through the back seat from the trunk! Now where do I put my spare?

COMPONENT SPEAKERS


AND FINALLY, IT SHOULD BE MENTIONED THAT HONEYCOMB FLAT-DIAPHRAGM SPEAKERS SEEM TO BE GAINING ACCEPTANCE IN AUTOSOUND. BLAUPUNKT HAS THREE NEW MODELS, THE 4-INCH HC-1030, THE 5½-INCH HC-1540, AND THE 6½-INCH HC-1660, RANGING IN PRICE FROM $70 TO $90. AND PIONEER ADDS A NEW TWIST WITH ITS HYBRID TWO-WAY SYSTEMS: THE TS-F606 ($180) AND THE TS-F202 ($120) OFFER HONEYCOMB WOOFERS WITH AN INTEGRAL CONE TWEETER. LOOK FOR MORE NEW CAR SPEAKERS USING THIS MATERIAL AND TECHNOLOGY IN THE FUTURE. HAPPY MOTHERING.

For an overview of the latest in high-end factory-installed autosound systems from GM, Ford, and Chrysler, see “Currents” in this issue.
DESPITE ITS EXCEPTIONALLY GRATIFYING behavior on the road, the Sony CDX-R88 differs from the typical car stereo unit in only two obvious respects: It substitutes a Compact Disc player for the usual cassette tape transport, and its electronics are housed in two separate chassis. The DIN-size dashboard-mount head-end chassis contains all the controls and the CD player. It attaches to the second, “hide-away” chassis through a ground connection, signal leads, and an umbilical that plugs into a multipin socket. This second chassis contains the system’s amplifier and has connections for the antenna input, DC supply, and speaker outputs; all but the antenna input are included in a single plug-in wiring harness.

Sony suggests that the amplifier chassis be stashed under a seat or in the trunk (even though the umbilical is only five feet long) and be used to drive the front speakers if you opt for a second amp and a pair of back speakers. The second amp can be driven from a line output (in-line pin jacks) on the head-end unit, making use of the fader tab protruding to the left of the volume/balance.
knob. You can also add a Sony XA-8 half-DIN cassette transport if you want both tape and CD. The necessary auxiliary input and switching connections are also attached to the head unit.

There are three DC supply connections: for ignition (the main supply), battery (the memory backup), and night illumination. Some panel elements (the tuner/clock/CD readout, the tuner band identification, and the pilots for local and mono reception modes) are run from the ignition DC, as are illuminated whenever the set is on; the preset numbers and other “beacons” go on with the car lights. It all works extremely well except in direct sunlight, which washes out the two pilots, leaving your ears the only arbiter of the mode settings.

The controls could hardly be more straightforward. At the left end are the basics. Above the volume/balance/lader knob cluster are two small sliders with center detents for the treble and bass controls. Below the knob are buttons for tuner/CD selection (you need not eject the disc in order to check a radio weather report) and tuner preset-bank selection (FM-1/FM-2/AM, corresponding to the three memory slots for each of the six presets), just to the right of the volume knob are the manual tuning buttons.

On the opposite side of the readout panel are four small buttons: for memory, local/DX, mono/stereo, and display. This last steps between frequency and clock time when the tuner is selected and between track number, elapsed time, and clock time for CDs. Across the bottom are the preset buttons, which are large enough to be fumble-free.

At the far right are the CD controls: forward and backward track skipping, play, stop, and eject. No attempts have been made to supply direct access to individual bands by way of a numerical keypad, but in a moving car, it’s probably easier just to tap the cueing buttons several times. Access times are, of course, much faster than in the comparable functions on a cassette transport, and for pick-and-choose listening, we much prefer the CD’s control scheme to that of any tape transport we’ve tested. Add to this the CD’s much greater ruggedness and its freedom from any problems of head azimuth, noise reduction tracking, or EQ matching, and we now consider it the clear medium of choice for music playback in the car. As Compact Disc libraries grow, we expect that the R88’s format will become increasingly commonplace, replacing the now standard tuner/tape-deck arrangement.

We might be less confident of this had the CD transport in the R88 not performed so superbly. The extremely low-mass (and, therefore, low-inertia) laser pickup with its “hyperdamped” suspension—a new design—responded flawlessly, despite road shock that was, if anything, worse than usual because of unrepaid winter potholes and frost heaves on our “test track.” Part of this shock resistance may also stem from the unit’s “auto memory” circuit that quickly returns a jolted laser pickup to its pre-pothole position.

Compared to the performance of typical car stereo tape transports, all the figures from Diversified Science Laboratories’ bench tests are outstanding, and most will stand direct comparison with those for home CD players. The frequency response won’t quite do so, but the minor aberrations shown in our data column are similar to those found in the FM section’s response and thus must be attributed more to the prepamp electronics than to the CD circuits. In the interrupted-signal test of ability to play imperfectly made discs, the pickup did begin to stumble on the 600-micrometer “dropout,” whereas most home models will get past the maximum (900 micrometers). On the other hand, the test simulating surface dirt—which is more important, particularly in a car environment—posed no difficulty even at the worst case (800 micrometers).

At full volume level, 0-dB peaks from the CD section clip the line output. For this reason, the lab measured it set for a maximum output of 1.5 volts—a volume setting more representative of one you might choose in practice. Surprisingly, the output low-pass filter is unusually gentle in its rolloff, permitting passage of spurious ultrasonics. This puts a premium on the avoidance of amplifiers with high intermodulation distortion or that can deliver very high power at ultrasonic frequencies.

The FM section also uses a new system (or algorithm, you might more accurately call it) for responding to fading stations. As in most models, the channels are progressively blended as signal strength declines, and for severely attenuated inputs, the output level is reduced to minimize noise and distortion. In addition, the high end is rolled off as the input drops “into the mud.” One result is that the design has no conventional stereo sensitivity figure; By the time quieting is reduced to only 50 dB (the measurement criterion), there is no channel separation at all—therefore, no stereo.

However, the proof of this pudding is in the listening. On the portion of our test track where we assess behavior on weak and fluctuating signal strength combined with severe and fluctuating multipath, the Sony produced the most listenable results we’ve yet encountered. Noise bursts were so low in level and so softened by the high-end rolloff that they seemed vanishingly faint. As a matter of fact, we counteracted some of the
automatic rolloff by turning up the treble control a notch or two to restore lost brightness, but even so, the noise remained extremely faint. At times, rapid changes in separation produced a "bellowing" stereo image that we judged mildly annoying, but choosing the mono mode (a valuable feature unfortunately missing from many other "signal optimized" models) banished even that effect.

The tuner bench measurements generally are very good, though not as exceptional as the in-car listening quality (which is the ultimate criterion, especially in a car system). All this proves is that what measures best on the basis of standards set by home gear isn't necessarily best when you get it on the road. The AM section goes, if anything, even farther in the same direction. With essentially no high end at all (a telephone circuit can have a more extended frequency response), it definitely lacks sparkle. But it banishes a lot of noise at the same time, going for speech intelligibility and leaving music listening pleasure to originate from the other two sources. The sensitivity measurement is outstanding, however; as in many other car receivers, the standard AM selectivity test results in no meaningful figure.

The tone controls are relatively restrained in overall boost/cut range, but they are well behaved and useful. Power from the supplied amplifier is generous by car radio standards, moderate by those of custom installations. Many users will consider it ample to drive one pair of high-performance speakers; for high acoustic levels, Sony's recommended setup with a separate, subsidiary (and higher power) amp driving the back speakers and the built-in amp powering the less demanding front ones is an excellent approach. (With a properly adjusted fader, the deeper bass and greater distance from the front-seat listeners creates extra current drain in the back, which creates the need for more power there.)

All things considered, we are extremely impressed by the CDX-R88. Cassettes seem chunky and positively anachronistic after you've grown accustomed to CDs in the car. The front-panel ergonomics are outstanding, partly because Sony has avoided unnecessary accommodations that get in the way of standard functions. But the design is conceived in terms that let you add options (particularly the matching cassette transport) relatively easily if you want extra features. And the FM section is superb in its civilized way with fading signals. No other car stereo system we've tested has so much going for it where it really counts—in a moving vehicle.

---

**Zapco S-80**

**Car Power Amplifier**

This is the first product that we've tested from Zeff Advanced Products Company (Zapco), a West Coast car stereo specialist manufacturer offering a variety of power amplifiers, preamplifiers, and equalizers, including one of the very few parametric models we're aware of for automotive systems. Both the products and the literature imply a focus on ultrahigh-performance custom systems. That is, Zapco goes for performance on the assumption that its installers already know their business and makes no attempt to hold a neophyte's hands.

In addition to the high power and rugged construction you'd expect in the products of such a company, the S-80 offers what Zapco calls "balanced differential white rejection..."
RATED POWER (4-ohm load) 16.0 dBW (40 watts) / channel

OUTPUT AT CLIPPING (at 1 kHz; both channels driven)
4-ohm load 16.0 dBW (40 watts) / channel

DYNAMIC POWER (4-ohm load) 16.0 dBW

DYNAMIC HEADROOM (re rated power; 4-ohm load) +3 dB

HARMONIC DISTORTION (THD) 20 Hz to 20 kHz; see text
at 16 dBW (40 watts) ≤ 0.178%
at 0 dBW (1 watt) ≤ 0.002%

FREQUENCY RESPONSE
+ 0. - 1/4 dB. < 10 Hz to 23.5 kHz.
+ 0. - 3 dB. < 10 kHz to 50 kHz.

S/N RATIO (re 0 dBW; d-weighted) see text
Sensitivity (re 0 dBW) see text
INPUT IMPEDANCE see text
DAMPING FACTOR (at 50 Hz; re 8 ohms) 95
CHANNEL SEPARATION (at 1 kHz) 52 1/4 dB

Circuitry.” Simply put, this design seeks to cancel noise picked up in the signal leads feeding the input amplifier. To this end, the sleeve contacts of the gold-plated input pin jacks are connected to the inverting input of an integrated circuit whose noninverting input receives the signal from the jack’s central conductor. Assuming that the engine ignition or any other noise source induces the same spurious signal components in both elements of the lead, these components should cancel when they meet in the IC, since the IC amplifies only the difference between the two leads. The input isn’t truly balanced in the sense of, say, the three-prong Cannon (XLR) connections commonly found in most professional gear, however. For that, it would need two conductors both surrounded by a grounded shield.

While this part of the design achieved its purpose in our road-test vehicle, it posed some problems to Diversified Science Laboratories’ standard test setup and precipitated some changes in measurement methodology from those used in past reviews of competing amplifiers. So, while we must document the differences to permit fair comparisons, the problems DSL encountered in its testing appear unimportant in light of the amplifier’s exemplary behavior in our test car.

On the test bench, DSL found considerable hum at 60 Hz and its harmonics, obviously deriving from the lab’s AC power supply and presumably entering via the shield. When noise was measured with no input connected and the gain set at minimum, it registered a very encouraging 70 dB below a 0-dBW (1-watt) output—or what would have been a 1-watt output if a standard test signal had been present. With gain at maximum (boosting any noise generated ahead of the input level controls), noise measured −524 dBW (that is, −524 dB below 0 dBW, or therefore, 684 dB below rated power), which is still good. In these tests, what little noise was present consisted predominantly of spikes from the amp’s own switching power supply.

For the distortion measurements, the normal full-gain setting proved unsuitable because of the 60-Hz artifacts in the output. The lab reduced gain until a 1-volt input produced rated output (an alternative method that seeks to simulate in-use conditions), which still delivered a 0-dBW output from an input of only 0.16 volt. This really is closer to the setting that probably will be ideal in most systems. With minimum gain, input sensitivity measures 0.3 volt (possibly preventing full rated output on peaks even with your front end running wide open); at the S-80’s maximum gain setting, sensitivity measures 0.035 volt (requiring less than full output from typical front ends if the amplifier is not to overload itself or the speakers on peaks).

Another measurement that frustrated normal lab technique was that for input impedance. The differential configuration simply prevented definitive data from being obtained. It appears, however, that input impedance is close to 100,000 (100k) ohms and that, unless the output impedance of your head unit is extraordinarily high, you need not worry on this score.

Zapco supplies with the S-80 a sheaf of suggested multiamp hookups and recommendations about wire gauge and fusing—and that’s it. Fortunately, the rest is pretty obvious. The baseplate has slotted flanges at the ends for secure mounting. At one end of the amp are the input jacks and gain controls; at the other end are a long screw-terminal strip that accepts bare wires or small spade lugs for the DC supply, the amp-on signal from your head unit, a ground connection, and the four loudspeaker connections (hot and return in each channel).

In a multiple-ampifier installation, the S-80’s 25-amp (per amplifier) fuse recommendation adds up to a huge current drain if you make a wiring mistake. (An S-80 is actually rated for 50 amps maximum current in the output stages, though the fuse will blow before this level can be sustained for any time.) On the other hand, there’s protection against overload, over-voltage, and undervoltage built into the circuitry, which will save you blown fuses (or melted wire, if you ignore the wiring recommendations) under certain conditions. But if you are going multiamp, make sure your battery can deliver all the current it may be asked for.

As we said, the S-80 performed flawlessly in our test car. Because of the lab’s experience, we were particularly concerned with noise pickup. But using the car’s electrical system (for which it is designed) instead of a lab AC adapter, and at any reasonable setting of the amp’s input-level adjustments and the head end’s volume control, we could hear no engine whine at any driving speed. If any was there, it was entirely masked by the engine noise itself, giving the subjective impression of total background silence. Nor were we able to detect any tuner noise attributable to RF (radio frequency) output from the S-80, confirming another of Zapco’s stated design aims.

That the S-80 passed its power rating with a comfortable margin almost goes without saying. In most cars and for most tastes, almost 17 dBW (50 watts) per side on peaks will be more than enough. But Zapco’s aim is to give you the option of being as extreme as you want in this regard. Whether you go for a standard setup with a single amplifier or for a megasystem—catechism or cataclysm, as you might say—the S-80 is ready to supply the need.
Jammed up against the stage of New York’s Bottom Line at a performance by Fairport Convention, I anticipated reliving the concert at home through repeated playings of the tour’s LP, Explosive Delighted! I enjoyed the exuberance of the band’s new lineup, which was infused with a special energy by the burlesque antics of fiddler Ric Sanders and by the intimacy and heat in the 400-seat club.

When I got home to the record, I was disappointed to discover that it contained no vocals and few of the songs that had made the evening I wanted to recapture. I found the instrumental unambitious and cold, and my attention drifted. My memory of the sweating liveness, kibitzing and crooning before a rapt crowd, demanded more passion, more color, and more dirt than the antiseptic and Spartan studio record offered. When I’d listened through once, I dispatched the LP to my shelves, where it hasn’t been heard from since.

Performances and recordings serve different purposes, so it’s unfair to measure them against one another or expect them to be interchangeable. But I, like most audiences, usually do—even though we know that a dull performance can strike an inspired performer and that the excessive cleanliness of modern recording can mute the most vivid. While we fight to see our favorites, we also like to collect souvenirs—that’s why record sales increase following artists’ appearances and why so many artists sell LPs and tapes along with T-shirts after their shows.

Many bands try to find a correlate between the stage and the studio with live recordings. But musicians often are tempted to clean up the tapes—to eliminate the inevitable buzzes and hums and imbalanced sounds. This intervention strips concert recordings of the very attribute that makes them valuable to fans: the opportunity to share in or recall the immediacy and intensity of a live performance.

Tour-related albums—those that cover the currently performed material—can be recorded live or in the studio. But each runs the risk of diminishing the remembered event. Treating live performances and studio recordings as separate entities, even though some material of each may be heard in the other, alleviates their need to be interchangeable. Instead of half-heartedly trying to bridge the live/studio gap, performing bands and record companies should remain discrete and serve their audiences separately but equally. Discerning fans will approve.  

Live vs. Studio

Birthday

Casting around for an idea for this month’s column, I decided that a little music might help. With nothing particular in mind, I pulled one of Gidon Kremer’s records off the shelf and read on the jacket that he was born forty years ago today, February 27. A happy coincidence, I thought. Now I can write about birthdays.

First of all, Happy Birthday, Gidon, wherever you are. Turning forty isn’t easy, but at least you do it only once. My second birthday greeting is directed to another Russian, also a string player, who turns sixty a month from today. Mstislav Rostropovich has a lot to celebrate, beginning with ten years as the music director of the National Symphony Orchestra in Washington, D.C. He has had a brilliant string of musical successes in Paris, where he now makes most of his records, and in New York, where he is currently engaged in a marathon series of concerts with the New York Philharmonic, the National Symphony, and the Boston Symphony. Before he turns sixty, he will have played 15 major concerted works for cello and orchestra on five different programs here, plus the complete solo suites of Bach in two recitals. He will also have conducted two weeks of subscription concerts with the Philharmonic, the first devoted to the Fifth Symphonies of Tchaikovsky and Prokofiev, the second to Benjamin Britten’s War Requiem.

“I’m doing it as a sort of exam,” Rostropovich told me a few weeks before D-Day (as in Dutilleux, whose Tout un monde lointain was the major work on the first program in the cellist’s birthday marathon). Some people are content to rest on their laurels at his age, but Rostropovich insists on going out and winning new ones. An especially important one, presented to him last week by Musical America, our sister publication, is the title Musician of the Year. “The longest cello concerto in the repertory is the concerto of Rheinhold Glière,” Rostropovich noted in his acceptance remarks. “It’s about an hour long. When I started it, I was clean-shaven; when I finished, I had a little beard. Then I felt like a musician for an hour. Never before have I been a musician for a whole year!”

Another birthday celebrant of note: Conductor Carlo Maria Giulini shares a May Birthday with the author of these lines. As I write, he is in Milan, preparing to record Mozart’s Piano Concerto No. 23 with Vladimir Horowitz for Deutsche Grammophon. Buono compleanno, Maestro!  

Ted Libbey
Memories of His Master's Voice

By Edward E. Swenson

An Exclusive Interview
With the Late Ronald Kinloch Anderson, the Edinburgh-Trained Musicologist and Performer Who Became EMI's Artistic Director and Chief Classical Producer.

As the artistic director and the chief producer of classical recordings at Angel EMI in the heyday of stereo, Ronald Kinloch Anderson had contact with many of the great artists of the post war years and was responsible for many widely admired recordings. The following excerpts from a radio interview that took place shortly before Anderson's death in 1984 are here published for the first time.

In the interview, Anderson candidly discussed his working methods and, in company with other revealing details, described the surprising, sometimes bizarre behavior of noted artists in front of the microphone: Sviatoslav Richter's manic concentration and machinelike endurance astonished and nearly starved Anderson; Birgit Nilsson's heat-resistant, wear-resistant constitution got him out of a hot spot during a session at the Rome Opera; and Janet Baker's secret high A launched a lasting friendship.

The interview includes Anderson's remarkable first-hand account of musical life in Nazi Germany, culminating with a description of Wilhelm Furtwängler's benefit concert at the old Berlin Philharmonic, with Hitler, Goering, and Goebbels in the audience. With the imminent release on Compact Disc of the bulk of Anderson's finest work, his insights into the art of recording and his behind-the-scenes glimpses of some of the century's most significant artists provide an important link to what was surely a golden age.

ER: You have been responsible for some major recording projects, including the BBC broadcast of Puccini's Tosca, which was filmed on location in Rome.

RKA: Actually, we made the soundtrack in London. I don't think it is any secret that Sherrill Milnes was unable to be present when we recorded the opera with Placido Domingo, Raina Kabayevskia, the rest of the cast, and the chorus. We knew beforehand that he couldn't be there, so we simply recorded all of his part. Then the tape was flown across him in San Francisco, and he recorded his part there. When it came back, it sounded very good. Mind you, when he was in London, I had gone very, very carefully through the role with him, marking abso-
Working in the position I was in is to make mistakes. To perform in public. I think some of the chief artists have said to me that they really don't like recording much, that they would prefer to perform in public. I think one of the chief and most difficult functions of somebody working in the position I was in is to make the recording artist feel that recording is the same as performing in a concert. Because, after all, when we play at a concert, we know it's going to start at eight o'clock, and then come hell or high water, we've got to do the best that we can. The man in the recording studio doesn't know this. He knows that the session starts at two-thirty, but he knows equally well that by three-thirty, he may still be able to do the same bit over again. This is a very different point of view. I used to try not always successfully, to achieve something of the feeling of "Now it is important. We are now going to do our best." That is why I would like to say to the conductor or the pianist, "Now play the whole movement—play the whole work, if you want to—and get into a real performing spirit."

ES: Would you tell us something about your student days in Berlin before the war?

RKA: I was studying with Edwin Fischer in Berlin during the early days of the Nazi period. Berlin still had a very, very fine musical life, although it was beginning to lose some of its best people. The Jewish artists were leaving one by one, for very understandable reasons. Wilhelm Furtwängler was the director of the Berlin Philharmonic, and at the time, he was also the director of the Berlin Opera. He was a world-famous conductor, one of the absolutely top conductors. He was not Jewish and he wasn't a Communist. He had no special reason for wanting to leave Hitler's Germany. He was a very powerful man, and so he tried to take up the cudgel for other people—like the composer Paul Hindemith—who were being suppressed. He also tried to help other artists and even attempted to perform some music by "that Jew, Mendelssohn."

I remember when he put the Mendelssohn Violin Concerto on the program of the Philharmonic. This event, which would have meant nothing two or three years earlier, became a sensation. Furtwängler, to do him justice, did at least try. But he didn't reckon on the fact that the Nazis might overrule him. So life was made difficult for him. He had a property in Switzerland and went there to cool his heels for a while. At some point, he was invited back by the most powerful of the Nazi lot and was told that he could have absolutely everything he wanted. Every sort of facility would be put at his disposal if he would just come back. The Nazis had begun to realize that they soon would have no conductors of any distinction at all. Bruno Walter had left because he was a Jew. Fritz Busch had left because of his socialist—or at any rate, democratic—principles. Hermann Scherchen had left. Otto Klemperer had left. Practically everybody had left, and Furtwängler really was their one hope.

Eventually Furtwängler, perhaps weakly, did come back. His first great concert was to be in the old Berlin Philharmonic Hall for the benefit of what was called the Winterhilfswerk, a Nazi organization that was supposed to help the jobless. It was very shortly after Hitler came to power. How I ever got a ticket for this concert I don't know, but I did.
It was the great event of the time. Furtwängler was coming back to Berlin. The three Nazi leaders—Goering, Goebbels, and Hitler—had decided that they would support this event. They sat in a box at the hall, which was a rectangular building with the boxes on the right. I happened to be sitting on the very end seat of one of the rows just below the box where these three “gentlemen” were sitting. It was a very exciting concert, but it was made even more so for me: I couldn’t help thinking, because their heads were in one line from where I was sitting, “one bullet would do it all.”

**ES: What was musical life like in London during the war?**

RKA: Part of the time, there was no musical life at all. During the very beginning of the war, our government was so understandably terrified of what might be going to happen that it imposed a total blackout. Literally, there was not more than a pinpoint of light allowed in the streets, and this meant that nobody went out in the evening. Then we went through what was called the “phony war,” which was the period when the Germans sat behind their barriques and the French behind theirs and absolutely nothing happened.

It seemed a bit silly. We weren’t having any concerts. We weren’t going out in the evening. Little by little, these restrictions were loosened, but people still were afraid to go out in the evening. Myra Hess had the marvelous idea to use the National Gallery, which had been emptied of its treasures, for midday concerts. She just went on, going on tour in America when the war started. She canceled her tour and decided to stay in England. She got in touch with all the artists and organized concerts at lunch time. She succeeded in enlisting every artist who was in England, including a lot of distinguished people. I remember even somebody quite unusual appearing at these concerts: the American tenor singer Elena Gerhardt, who had been a great name in my youth. She had left Germany for all sorts of admirable reasons and was living in London. She sang with Hess quite a lot.

I played at the National Gallery concerts once or twice with my ensemble during the worst part of the blitz. When the air raids were really serious, the concerts were moved from the gallery down to a sort of subbasement. There was a lunch counter with sandwiches and coffee. It was all done voluntarily. The artists got paid three pounds or something like that for their participation.

As odd as it seems, it was a wonderful time.

**ES: Did Benjamin Britten participate in those concerts later on?**

RKA: I don’t think so. He was in America. He came back to England about 1943. Although he was a pacifist and had no intention of fighting, he felt he had to come home. Another person who returned to England, who was a much closer friend of mine than Britten, was Sir John Barbirolli, who had conducted the New York Philharmonic for some years. In 1941, at the height of the submarine business, he returned for about a month and conducted a lot of concerts in aid of war charities. After his contract expired in New York, he returned to England and reorganized the Hallé Orchestra in Manchester under the most difficult wartime conditions. Even though he didn’t have very many good players to choose from, he formed a superb orchestra. He was a great friend, and together we made many recordings of both orchestral music and opera. In his younger days, he had been an active opera conductor. By the late ’60s—when he had a recording contract with EMI and I was working very closely with him—we managed to persuade him to go back to conducting opera. We started with a recording of Purcell’s *Dido and Aeneas*, and from that we went on to do *Madama Butterfly*. The latter is a marvelous recording, which we made in Rome with Renata Scotto and Carlo Bergonzi. Rome remained our regular recording location for a number of years. Scotto was already an established artist, but I wouldn’t say that she was yet quite as famous as she now is. The way Barbirolli molded the performances was absolutely marvelous. In the first act, there’s a point before Butterfly appears when Pinkerton is being shown around the house by Goro, the marriage broker. Barbirolli used to say he should be an “elegant villain.” It was absolutely wonderful the way Barbirolli coached the singer of that part and shaped the character of his voice.

**ES: One of the recordings you made with Barbirolli that has always fascinated me is Verdi’s *Otello*, with a cast I find a little puzzling. The tago is Dietrich Fischer-Dieskau, the Otello is James McCracken, and the Desdemona is Gwyneth Jones. I am most surprised about Fischer-Dieskau singing Iago. One doesn’t think of him normally as a Verdi baritone. For example, I just can’t imagine a lyric baritone and specialist in Lieder ever singing the duet “Sei, pol chiel,” which requires a dramatic, dark-toned tenor voice and a colorfully dramatic baritone.**

RKA: Perhaps. In a sense, he is. It’s a Verdi baritone, but he had sung Iago in Germany. The recording has considerable weaknesses, but I still think that Fischer-Dieskau, in his way, is a very, very good Iago. Above all, he is an extremely intelligent Iago. He knows exactly what he is doing and controls his voice very well. I don’t think it’s an ideal part for him. Roles like Mandryka in Strauss’s *Arabella* are absolutely wonderful for him. Unfortunately, I never had a chance to record him doing Iliad with Gerald Moore, but I think he is a splendid artist. He and Janet Baker have done a lot together. Their approach is very much the same. They have this tremendous depth of interest, refined taste, and an extraordinary technical command. They love working together because their minds work on the same wavelength.

**ES: Would you tell us something about your association with Janet Baker?**

RKA: I’ve known her since about 1956, when she was just beginning her career. It was just after I had stopped playing with the Masters Quartet and had taken up with another pianist doing some four-hand piano work. There was a chamber music organization in London—it still exists—that used to put on Sunday evening concerts at very low prices. It was the sort of place where you would go to try out a program. I had arranged to do a Schubert and Brahms program. We would do the two sets of the Brahms *Liebeslieder Waltzes* at the beginning and at the end, and in the middle, we would play some of Schubert’s four-hand piano music. So I talked to the organizers and to a very charming Austrian soprano named Ilse Wolf, whom I asked to assemble a young quartet who would be willing to sing for very little money. Well, that young quartet had as the contralto a lady named Janet Baker, and the baritone was a gentleman named John Shirley-Quirk. Wolf was the soprano, and the tenor was Edgar Fleet, who was also very good. That was our quartet for *Liebeslieder*, and I’ve known Janet ever since.

I think one could tell even then that she was going to be something quite remarkable. During my recording days, I got to know her much better and, indeed, I think I introduced her, artistically at least, to Barbirolli. I don’t think he had ever worked with her before. We had this really remarkable experience, one of the things I shall never forget. He was going to record Edgar’s oratorio *The Dream of Gerontius*, which was a work he was deeply attached to. I think it is a very
SOMEBOY HAD TO RUN AROUND IN CIRCLES, BECAUSE AT NIGHT IN THE SUBURBS OF LONDON, FINDING A BUNCH OF GRAPES ISN'T ALL THAT EASY.

fine work, although I'm not sure it's quite as great as he thought it was. It has among the soloists a very strenuous, high, dramatic, Wagnerian sort of tenor, a bass who is much less important, and an alto who has to be a sort of alto cum mezzo because the part goes up to a top A.

Barbirolli and I were discussing the casting of the alto part. There were two singers we thought were possible, including Baker, who was beginning to be very well known, although she was not yet an international celebrity. We decided to ask both ladies to audition on different days. I'll never forget the day Baker came to sing bits of Gerontius to us. It was a remarkable experience. I knew she was very good, but I didn't know how good she had become. The audition was held in a perfectly terrible little dirty side room of this rather broken-down hall with a dreadful old upright piano that was practically falling to pieces. When she started singing, it was as if the whole room had been lit up. After she had sung just a few phrases, John and I looked at each other. We knew each other very well at this point and I felt we didn't need to hear any more.

But he was always the practical musician. Although he admired very much what he had just heard, he said to her, "Yes, and that phrase with the top A, would you like to sing that for us?" In those days, she was billed as a contralto. You don't necessarily expect a contralto to soar up there. Well, the top A came out like a ship in full sail running into the sunshine. From that time on, I became her devoted admirer and I'm proud to say that we are still very good friends.

ES: You have also recorded a number of notable pianists, including Sviatok Richter.

RKA: Yes, that was quite an experience. None of us had heard the generation of artists that had grown up in Russia during and after the war. I remember that, in those days, I was naive enough to look at a Russian as if he were something out of the zoo. Were they really quite human or like something from Mars? The Iron Curtain was so solidly iron that people didn't come and go. Then, after the war, little by little they began trickling out. David Oistrakh was one of the first. And I heard rumors, as one does in the musical world, about another Russian, a pianist, who hadn't been to the West. Then Richter came and played in America, and the reports were absolutely fabulous. He didn't visit England on that occasion; he must have been hurried back to Russia in case he would somehow get infected with democracy.

The next year, he was coming to London, and every recording company was after him. In Russia, where their own state bureau manages the artists, they never made exclusive contracts with any one recording company in the West. The companies simply bid against each other. EMI, among several others, succeeded in getting one record out of Richter when he was in London. Of course, the red carpet was laid out, and Richter was not asked if he would come to a recording session at a specific time, but instead was asked when he would like to come. So he chose to start at four in the afternoon, which was an unusual time for us to begin. I had planned that he would do the ordinary three-hour session. We would take a break about seven and then go on till eleven.

We started with the Schumann C major Fantasy, Op. 17, which he played magnificently. We went on and on. He played long stretches. He listened to rehearsals. He played them again. We'd discuss the results in German. We had started at four and had had our cups of coffee handed in. I asked him, "Wouldn't you like to have coffee or anything?" "No, no, I just want to go on playing." It got to be seven. It got to be half past seven. It got to be eight. I thought, "My God, I have to keep all these engineers here. They're hungry. They've got to have something to eat." So I said to him, "Wouldn't you like to stop just for a short time?" "No, I want to go on playing." Eventually I had to say, "Look, I'm sorry, but I'm responsible for this whole team of people. They must have a meal. Would you be kind enough just to stop long enough for us to have something to eat? Can I get you something?" "No, no, no, I don't want anything . A bunch of grapes, yes, get me a bunch of grapes." So somebody had to run around in circles, because at night in the suburbs of London, finding a bunch of grapes isn't all that easy.

We went on until two in the morning, but we got half the recording made. When he decided to begin again at four the next afternoon, we were prepared for it. We had food ready. We had people bringing in trays for us, and for him, if necessary. I think we went on until about midnight. He had enormous stamina. He just did not stop.

ES: Several of the opera recordings you have done feature Birgit Nilsson as the soprano. Perhaps you could tell us something of your association with her.

RKA: Birgit Nilsson is a marvelous person. She is as tough as they come. When I say tough, I mean physically tough. One story about her will show exactly what I mean. The first opera I recorded with her was Turandot. It wasn't her first Turandot recording, but the subsequent one with Franco Corelli. We recorded in Rome in midsummer heat at the opera house. At the time, they were giving opera performances out-of-doors at the Baths of Caracalla. The seats were taken out of the house, and we worked with the orchestra on the floor of the stalls and on a platform built forward over the orchestra pit. When I made the recording schedule, which began with her biggest aria, "In questa reggia," I didn't know that she was rehearsing in Bayreuth and that she was coming down especially to do the recording in Rome. She arrived at four, which was supposed to be after the day's heat. It wasn't. It was at the worst of it. We had no air conditioning in the opera house, and the streets were like burning furnaces. I arranged for a car to go to her hotel to bring her to the recording session. When she arrived, she said, "Well, I've just come from Bayreuth. I only arrived in Rome at two. I got up at six this morning and I drove to Nuremberg, where I caught a plane for Munich, and I then got another plane to Rome. I've been to the hotel, where I had a little wash, and I've come right along to your session." I said, "Well, if I'd known anything like that, I'd never have put down this aria. We can change it, but it's going to upset the whole schedule if we do. I'm terribly sorry."

"Oh, that's all right," she said. "Don't worry. I'll be all right, I'm sure." So she sang, and sang magnificently. Twice through was all we needed to do. I thought it was quite something, particularly after coming into that heat after a long journey. I asked her, "Are you feeling all right?" "The floor is going up and down a little, but it doesn't worry me," she said. I replied, "Well, at least we are finished. We don't have to do any more today. You can go home and have a good rest and I'll see you tomorrow. I'll call a car to take you back." She said, "Oh no, I think I'll walk."

ES: It's fascinating to hear about your career and the artists with whom you have collaborated. Before I say thank you, do you have any final thoughts?

RKA: Do me a favor. If you play some of the Butterfly recording, put on the end of the first-act love duet.

ES: You mean the section that begins "Bimba non piangere!"?

RKA: That's right. It's very beautiful. Every time I hear it, I cry.
**BARTÓK SONATAS: KREMER, SMIRNOV**

of the five or six relatively new pairings on record of Béla Bartók’s two sonatas for violin and piano, Gidon Kremer and Yuri Smirnov’s on Hungaroton is the most impressive. Its flavorings are perhaps not so spicy as those in the vintage recordings by Joseph Szigeti and Bartók himself. But even in their basically “cool” approach to the music, the Kremer/Smirnov versions maintain a heated tension more consistently than do most of the other recent treatments, and they project the complex forms of the music in ways that are eminently more graspable. The analog LP was vibrant and clean, and in this CD reissue, the sound is radiant and virtually spotless. But the sonics seem almost not to matter when one considers the interpretations. This is great music, brilliantly— and profoundly—interpreted. Playing time: 52:29. (Hungaroton SLPX 11655; Distributed by Qualiton Imports, 39-28 Crescent St., Long Island City, N.Y. 11101.)

**SCHUBERT DUETS: ROHNNANN, SCHIFF**

Schubert wrote enough four-hand piano music to fill at least a hall-dozen albums. Yet aside from the Fantasy in F minor, D. 940, the Allegro in A minor ("Lebens-stiune"), D. 947, and the so-called "Grand" Rondo in A, D. 951, relatively little of it has ever found its way onto disc. Hungarian CG’s reissue of Imre Rohmann’s and Andras Schiff’s 1979 effort offers those pieces plus the two Marches caractéristiques that make up Op. Posth. 121 (D. 968b); it would get a warmer reception from me if it contained more of the off-the-beaten-track repertoire or if the interpretations had a lighter, more inventive touch, but there’s no denying the basic solidity of the performances. Playing time: 56:20. (Hungaroton SLPX 11941; Distributed by Qualiton Imports, 39-28 Crescent St., Long Island City, N.Y. 11101.)

**RACHMANINOFF'S "BELLS": SCOTTISH NATIONAL, JARVI**

Rachmaninoff’s magnificent choral symphony, The Bells, Op. 35, which he considered to be his finest work, has received its fourth CD recording (prior interpretations have come from Leonard Slatkin on Moss Music Group, Vassil Stefanov on Fidelio, and Vladimir Ashkenazy on London). There are many pluses to this new version: The male soloists, Keith Lewis, tenor, and David Wilson-Johnson, baritone, are excellent; the Scottish National Orchestra and Chorus are fine, and conductor Neeme Järvi is responsive to the changing moods of this magical score. As for the filler, a seldom-heard love duet by Tchaikovsky (using the same theme as his Romeo and Juliet overture) is a welcome addition to the CD catalog, and his Festival Coronation March in D brings the program to a rousing conclusion.

Soprano Suzanne Murphy does solo duties in Rachmaninoff’s Vocalise, Op. 34, No. 14, in the Tchaikovsky duet, and in the second movement of The Bells; unfortunately, she produces a fragile sound that is light and characterless. It is difficult to imagine that she is capable of singing major Verdi and Bellini roles, as she is reported to do, and she is surely not the equal of Roumiana Barova or Natalia Troitskaya, the sopranos heard on the Fidelio and London recordings. Chandel’s sound is typical of much of the label’s work—bright, resonant, and rather distant. Complete texts and translations are provided. While there is no ideal CD recording of The Bells, the best currently available is the London disc with Ashkenazy conducting the Concertgebouw Orchestra, even if the choral sound is at times rather congested. Playing time: 62:12. (Chandos 8476.)

**BARTÓK, BARBER, SCHOPENBERG WORKS: STOKOWSKI**

ON THIS RECENT ANGEL EMI COMPACT DISC, Leopold Stokowski can be heard at his best in Barber’s Adagio for Strings, and Schöenberg’s Verklärte Nacht, two post-Romantic scores that seem to have been custom-made for him. The Barber, in spite of an unusually brisk tempo, reaches a climax of soaring intensity, while the Schöenberg gives Stokowski the opportunity to draw remarkably rich sonorities from the strings. This account of the Schoenberg dates from 1957 (it was Stokowski’s second recording of the piece); the Barber was recorded in 1956.

Unfortunately, Bartók’s Mese for Strings, Percussion and Celesta, also recorded in 1957, receives a reading as flaccid as am I’ve ever heard, and the digital remastering does little to clarify the blurred sonics of the original recording. Fritz Reiner’s Chicago Symphony recording of the Bartók, made only one year after Stokowski’s, is superior in every way and is coupled with Reiner’s magnificent reading of Bartók’s Concerto for Orchestra. Admirers of Stokowski will probably want this CD anyway, just for the Barber and Schoenberg. Playing time: 67:57. (Angel EMI CDC 47521.)

**TCHAIKOVSKY CONCERTO: SCHIFF; CHICAGO, SOLTI**

THE PLAYING TIME OF THIS RECENT LONDON COMPACT DISC IS fairly generous (58:05), and the Chicago Symphony plays spectacularly. Right from the famous opening horn subject of Tchaikovsky’s Piano Concerto in B flat minor, the playing makes it obvious that this is a top-notch orchestra. Conductor Georg Solti and his forces make many fine points: One might mention particularly the tension that marks the orchestral buildup before the soloist’s double-octave flurries in the finale. Ernst von Dohnányi’s charming Variations on a Nursery Song, Op. 25 (on “Twinkle, Twinkle, Little Star”), is also presented in dazzling fashion. Solti’s concept captures both the whims and power of this strange score, which includes an almost terrifying passacaglia whose spell is finally broken by the simple murmurs tune. It is a great convenience to have all 14 variations separately indexed. Unfortunately, there are some drawbacks here. While András Schiff is an accomplished soloist, he is also a cautious one; there is little excitement in his Tchaikovsky, which he plays as if it were written by Bach. He is more successful in the Dohnányi, although Earl Wild’s now-deleted recording had considerably more sparkle. Also, London’s engineers still have not solved the problems of recording in Orchestra Hall. The CSO sounds hard and unresonant, and the solo piano seems subdued and lacking in brillance. (London 417 294-2.)

**HINDEMITH WORKS: ROSENBERGER, DE PREIST**

THE WORLD WIDE VOGUE OF PAUL HINDEMITH, certainly one of our century’s greatest composers, seems to have diminished since his death in 1963, perhaps because recording companies depended on him to conduct the definitive realizations of his important works himself. This drop in his popularity (a transitory one, I believe) makes the present coupling of two major Hindemith works—The Four Temperaments and the suite from Nobilis-

---

**The CDS Spread**

MINI-REVIEWS OF THE LATEST COMPACT DISCS

BY ROBERT E. BENSON, PAUL MOOR, K. ROBERT SCHWARZ, TERRY TEACHOUT, AND JAMES WIERZBICKI

---

**HIGHER FIDELITY**

60
subsidizes music and musicians, in effect, deserves benediction attention.

This release, pairing Walton's choral masterpiece Belshazzar's Feast with a suite from his music for the film Henry V, marks a stunning debut. The Leeds Triennial Festival of 1931, where Malcolm Sargent unveiled Belshazzar's Feast, featured the Berlin Requiem, with its two auxiliary brass bands, so Walton decided to make full use of those maimmoth forces in his own piece as well. Such personnel demands have restricted subsequent performances, but this 1986 recording, with the RPO's principal guest conductor André Previn presiding and baritone Benjamin Luxon serving as soloist, exhibits the ultimate in technological perfection and makes for a literally thrilling experience. Walton's exemplary music from Olivier's film masterpiece Henry V makes the disc all the more appealing.

Funny Coincidence Department: Angel EMI has just rereleased, on CD, a 15-year-old recording of Belshazzar's Feast with the London Symphony Orchestra and Chorus under Previn and with John Shirley-Quirk as soloist; it also offers three attractive shorter works of Walton, including his jolly, boisterous overture Portsmouth Point. I have had no opportunities to compare that older recording with this brand-new one, but you might want to bear in mind that two CD versions now exist. Playing time: 52:19. (RPO CD 8001. Distributed by MCA.)

**MENDELSSOHN "MIDSUMMER": LONDON SYMPHONY, PREVIN**

A word of caution before you put on this disc: EMI's remastering of this recording has an unusually wide dynamic range. If you set your control to give the forest roulades at the start of the overture an apt degree of pianissimo audibility, the fortissimo that explodes at letter A in the score may just explode your speakers as well.

Otherwise, this recording offers little but sheer delight, although EMI really ought to have included the texts for the two vocal movements—sung, incidentally, in English. What captivating music! How long since you've really listened to the more familiar of these movements? André Previn has obviously studied them as thoroughly as he might have for the world premiere, and his loving revelation of detail brings it all vibrantly alive. If it makes you feel, as it does me, like a total failure to contemplate that Mendelssohn wrote this overture at the age of seventeen (with his Octet for strings already a year old), you may derive some slight consolation, as I do, from his referral to "the fruit of much hard work" when he composed the 13 further movements at the doddering age of thirty-four. Playing time: 57:30. (Angel EMI CDC 47163.)

**WALTON "BELSHAZZAR": ROYAL PHILHARMONIC, PREVIN**

London's Royal Philharmonic has cannily established its own label with the obvious purpose of eliminating the middleman—in this case the commercial recording firm—to the professional and financial advantage of this fine orchestra and the musicians who compose it. Certainly any enterprise that decided to reflect that in his playing. Yet I find the understated, airy lyricism of the Adagio the most affecting and feel that the rest of the sonata would have gained from some of the almost patrician poise Zukerman brings to the Franck. Playing time: 52:01. (Philips 416 157-2.)

**BACH, MARCELLO, VIVALDI VIOLIN CONCERTOS: SUK**

A Bach connection exists among all the composers on this disc. During Bach's youth, when he was attempting to absorb the textural lucidity, formal precision, and melodic thrust of the Italian style, he arranged for the keyboard a number of Italian solo concertos. Among these were the Oboe Concerto by Alessandro Marcello (often wrongly attributed to his younger brother, Benedetto) and the Violin Concerto, Op. 3, No. 9, by Vivaldi. In addition, his original harpsichord concertos, composed much later in Leipzig, are themselves mostly adaptations of his own (now lost) solo concertos.

What is presented here as the Concerto for Violin and Oboe, BWV 1060a (usually performed in C minor, but recorded on this occasion in its D minor incarnation), is an attempt to reconstruct the possible model for Bach's later C minor harpsichord concerto.

Violinist Josef Suk and oboist Jiří Adamus perform two concertos together and are each allotted a single solo vehicle. They are accompanied by the Suk Chamber Orchestra, a small ensemble whose only concessions to Baroque performance practice are its reduced size and its use of harpsichord continuo. Otherwise, both soloists and orchestra agree on a slightly anachronistic view of Baroque style, a full-blooded approach that embraces sustained bows, a wide, shimmering vibrato, and hushed ritardandos. Whether or not one accepts the interpretive premise, the playing proves to be robust and expressive, never exaggerating the stylistic anachronism to the point of tastelessness. Fans of similar Western European ensembles—such as the English Chamber Orchestra or the Academy of St. Martin-in-the-Fields—will surely be delighted by Suk's spirited performances. Playing time: 49:14. (Supraphon C0 1074. Distributed by Denon America.)

**DEBUSSY PIANO MUSIC: MICHELANGELO**

Arturo Benedetti Michelangeli's long-celebrated Deutsche Grammophon recordings of Debussy have finally been transferred to CD. The first disc contains the first book of Préludes; the second, both books of Images and the Children's Corner Suite. Michelangeli's exquisitely cool and breathtakingly assured performances are deservingly legendary. The original analog recordings have been competently remastered. Playing time for Préludes: 43:50. (Deutsche Grammophon 413 450-2). Playing time for Images/Children's Corner: 45:03. (Deutsche Grammophon 413 372-2.)
Live Bellini From Covent Garden

BELLINI:
I Capuleti e i Montecchi.
Gruberova, Soprano; Rolf-Loe, Probst; Tomlin, Oratorio and Chorus of the Royal Opera House, Covent Garden, Muzio, John Willan and David Grevos, prod. Angel EMI CDE 47387 (2, D), DS 3949 (2).

I somehow managed to miss the famous pirate recording of Vincenzo Bellini's I Capuleti e i Montecchi—one with Renata Scotto and Giacomo Aragall as the ill-fated lovers, the other with Antonietta Pesenti and Fiorenza Cossotto. My first contact with the work was in Boston in the mid-1970s when Sarah Caldwell invited Tatiana Troyanos to make her majestic return to the United States as Romeo to Beverly Sills's incandescent Giulietta. In addition to being swept away by Troyanos (then at the peak of her vocal powers) and by Sills's fragility and pathos in spite of her being a less than good voice, I was startled to discover what a delightful piece Bellini's telling of the story really is. Bellini the master spinner of melody is amply apparent in this mid-career work (La Sonnambula, Norma, and I Puritani were yet to come), and his ability to give the singers remarkable showcases, great ensembles,
"Many so-called "8 Ohm" speakers present your amplifier with an impedance that varies from 3 to 30 Ohms, depending on frequency. Such speakers can seriously degrade your amplifier's performance.

That's why KEF developed the conjugate load matching crossover. It presents your amplifier with an ideal 4 Ohm resistive load at all frequencies. Because it's easier to drive, sensitivity and maximum amplifier output are effectively doubled. A conjugate load matching network is difficult to design because it simultaneously tailors frequency, phase and impedance. But the computer helps quite a bit.

'It is this scientific approach, so different from hi-fi pseudo-science, that convinced me to leave the University of Sydney and join KEF.'

"We wanted to make our speakers easier to drive. We ended up making your amplifier twice as powerful!"

—Dr. Richard Small, Head of KEF Research
and rousing finales is already fully in evidence.

Bellini tells a different tale than Shakespeare, but the outcome is the same. Here, in the climax of the first act, Romeo crashes the wedding ceremony and reveals himself to the gathered Capulets as the dreaded savior of the Montague clan. There is still a magic potion, and Romeo still does not learn about it in time. At the opera’s end, the warring factions witness the scene of death and blame Capello as the curtain falls.

Angel’s first try at the opera put Sills against the hopelessly miscast Janet Baker. It was conducted by the often brilliant Giuseppe Patanè, who somehow missed the mark on that occasion. In the present release, recorded live at Covent Garden, Angel EMI has a Capuleti of which it can be proud, one that does full justice to the most important characters in the opera. This means that the Romeo and the Giulietta, Agnes Baltsa and Edita Gruberova, deliver everything one could hope for. Unfortunately, it also means that neither John Tomlinson nor Gwynne Howell (Lorenzo and Capello, respectively) is up to the standards of an international opera cast. And it means that the recording is sonically not ideal, merely good enough.

Firebrands are Baltsa’s specialty. Even in roles that can be interpreted demurely, she bends the character to her temperament. She has tackled the big Verdi roles for Karajan, but she is really most at home in the bel canto repertory. Thus, Romeo is an ideal role for her, and she rises thrillingly to the occasion. No less in moments of introspection than of confrontation, she communicates. And she listens carefully to Gruberova so that their voices blend, a talent that seems to be vanishing in duet singing these days.

Gruberova lays her cards on the table with “Oh! quante volte,” offering a complete demonstration of her fabled control, her ability to spin long, hushed lines, and her sense of vocal dramas. She is an elegant, eloquent singer, and she and Baltsa together forge a particularly appealing partnership. If the basses are not up to par, at least tenor Dano Rafianti is in his correct repertoire, and he manages the role of Tebaldo with style.

Conductor Riccardo Muti’s contributions are uneven. There is a sense that he wants to be in control of every facet of the musical proceedings. But at times one gets the impression that the singers are simply not watching him—forcing him, for the sake of the performance, to let them do what they want. At his best, however, he makes Bellini soar with beauty and pulse with passion. In every respect, this is a better performance than his tepid, peculiar 1 Puntani, released on Angel five years ago.

In general, Muti’s live recordings have been more interesting than his studio efforts. This one is no exception. Covent Garden does not sound like the ideal house for microphone placement—the recording tends to favor the orchestra over the singers, and when the ladies turn away from the microphones, they seem to vanish altogether—but that is a small price to pay for the added intensity the singers and the maestro summon in front of a live audience.

The CD version puts the first two scenes of the first act on the first disc, the remainder of the opera on the second. My only major complaint with the recording concerns the disastrous layout error in the four-language libretto: Instead of placing the four columns of translated text across two pages, Angel EMI put the German and Italian on the right-hand page, the English and French on the overleaf, which means that the Italian and English are back to back, rather than side by side. Clearly, someone was not on the ball when this one went to the printers. Playing time: 150:12. Thad Eckert, Jr.

BERG:
Chamber Concerto for Violin, Piano, and 12 Wind Instruments. Concerto for Violin and Orchestra.

Stern, P. Serkin; members of the London Symphony Orchestra, Abbado*; New York Philharmonic, Bernstein, Steven Epstein*, John McClure, and Howard Scott, prods. CBS Masterworks MT 42139 (D*; AF) <[1 from MS 6373, 1962, digitally remastered.]

CARTER:
Piano Concerto*; Variations for Orchestra. Oppens*; Cincinnati Symphony Orchestra, Gielen. Elizabeth Ostrow, prod. New World NW 347-2 (D*; A).

OF ALL THE COMPOSERS OF THE SECOND Viennese school, Alban Berg (1885–1953) is by far the most accessible to conservative listeners. This is because he, more than any of his colleagues or even his master, Arnold Schoenberg, diluted strict serial techniques with tonal and highly lyrical elements. Intricate and dissonant as some of his music may be, it is never really exerting to tender ears and is often rewarding in its sheer expressiveness. This expressiveness was never more apparent, surely, than in his celebrated last work, the Violin Concerto, commissioned by Louis Krasner in early 1935 and completed on August 11, only four months before Berg’s death. Dedicated Dmn Andre en mans Engel, as a memorial to Alma Mahler’s teenage daughter, Manon Gropius (who had died of polio), it was to serve as a requiem for the composer himself. It was first commercially recorded by Krasner with the Cleveland Orchestra under Artur Rodzinski for Columbia c. 1941, and since then, it has been frequently interpreted on disc. (The current discography includes a still earlier broadcast performance by Krasner with the Stockholm Philharmonic under Fritz Busch, from 1938, on GM Records.)

One of the best of these versions was the first in stereo, recorded in 1962 by Isaac Stern and Leonard Bernstein, here reissued in a digital remastering that makes it sound even better than it did originally, when it was widely acclaimed for its vivid realism. Certainly, even expert ears would never guess that these sonics go back 25 years. They are particularly notable for theonal warmth and sweetness both of Stern’s solo passages and of the orchestra itself—an overall richness that admirably enhances the profoundly moving interpretation.

My personal preference has been the Itzhak Perlman/Seiji Ozawa/Boston Symphony version for Deutsche Grammophon (which I treasure in its Barclay-Crocker open-reel edition, now out of print). It features a more idiiosyncratic solo technique and a more dramatic reading overall, but for poignancy, Stern and Bernstein remain beyond compare.

The oversize Chamber Concerto (Kammerkonzert) is a recent, fully digital recording of an earlier work (c. 1925, the period of Wozzeck) that has also been recorded quite often, which is rather surprising, since it is considerably more difficult for unsophisticated listeners. But it need only be given a chance to speak for itself. Stern and pianist Peter Serkin collaborate ideally with Claudio Abbado’s British wind players to make the most of it. I only regret that the able annotator George Perle didn’t include the composer’s dedicatory letter to Schoenberg, in which he describes in detail the incredibly intricate formal structure of this remarkable double concerto.

R. D. Darrell
Like the music of Boulez, Stockhausen, Xenakis, Wuorinen, Babbitt, and others, Carter's music is hard on the ears.

Carter's music is also hard on the brain, but not because it is—as a casual listener might put it—impenetrable. Indeed, the music of Carter is accessible in a way that the music of his fellow front-line modernists, by and large, is not. As with the work of others who share his wavelength, the impact of a typical Carter composition derives from the solidity of its large-scale tensions and resolutions and from the tight integration of its materials, an integration that allows the listener at least to feel that almost all the musical ideas emerge from a single, finite pool of rhythmic figures and melodic cells. But the impact that is most immediate comes from the shape and motion of the phrases. However controlled their designs are and however well they fit into an abstract, formal plan, the phrases are gestures that seem to spring not so much from the composer's brain as from his spirit; they coil and surge and flow and ebb like the tides of genuine human emotion, and they do so constantly, losing their momentum only in pauses that are themselves corollaries of psychic states.

Carter's music is perhaps no more densely packed with information than the music of his contemporaries; the difference is, Carter's information can be grasped, at least to a certain extent, even by the first-time listener. The amount of graspable information seems to increase with each hearing. It has a multiplicity of "meanings," and it seems that the more intimately one knows a Carter composition, the more one realizes how much there is that remains unknown. This music is formidable, not because it is difficult to digest, but because—like Beethoven's late quartets and Bach's "art of fugue"—it offers virtually limitless food for thought.

New World Records' first Compact Disc release brings together two of Carter's loftiest creations—the 1955 Variations for Orchestra and the 1965 Piano Concerto—in performances led by a conductor who apparently responds as much to the music's emotive content as to its technical workings. Rumor has it that Michael Gießen was encouraged to abandon his position as music director of the Cincinnati Symphony because his approach was too cerebral for that city's largely conservative audience. In any case, while these are certainly intellectual readings, they are at the same time as forceful and propulsive as any Carter treatments can be. And they make it possible for a listener to get the gist of Carter's extraordinarily complex arguments far more than do earlier recorded versions of these works (Erich Leinsdorf's account of the Piano Concerto with Jacob Lateiner and the Boston Symphony, on RCA's long-out-of-print LM 3001; Robert Whitney and Frederik Prausnitz's Variations with, respectively, the Louisville Orchestra on Louisville LOU 58-3 and the New Philharmonia Orchestra on Columbia MS 7191). What is more significant, they fairly sweep away the competition in the way they compel the listener to become involved—not just intellectually but viscerally—with Carter's very human, very impressed musical gestures.

Especially in the concerto—in which pianist Ursula Oppens shares solo duties with a concertino group consisting of flute, English horn, bass clarinet, violin, viola, cello, and double-bass—the playing is brilliant. But the Cincinnati Symphony's collective virtuosity, like its musicianship, is apparent everywhere on this disc. For their execution as well as for their concept, these performances are, quite simply, superb.

Both pieces were recorded during concerts in Cincinnati's Music Hall (the Piano Concerto on October 5-6, 1984, the Variations on October 22, 1985). Audience noise is more apparent in the Variations than in the concerto, but not objectionably so; the tape hiss that accompanies the analog recorded Variations is an annoyance to which the ears can easily adapt, but it comes as something of a shock after the very clean digitally recorded concerto. Playing time: 15:02.

James Wierzbicki

HAYDN:

SYMPHONIES: No. 60, in C; No. 63, in C; No. 66, in B flat; No. 67, in F; No. 68, in B flat; No. 69, in G.


ELGAR:


SOME CRITICS MADE THE CASE THAT GEORGE SOLTI'S PERFORMANCE OF EDWARD ELGAR'S SYMPHONY NO. 1 PROVED THAT A NON-ENGLISHMAN COULD CAPTURE THE SPIRIT OF THIS QUINTESSENTIALLY ENGLISH MUSIC. I WAS MISTIFIED BY THIS ACCOLADE WHEN I COMPARED SOLTI'S MARCH THROUGH THE OPENING ANDANTE TO THE MUCH SLOWER BUT SUPERBLY BUILT AND EXQUISITELY EXPRESSIVE STATEMENT HEARD ON THE BARBICHLI RECORDING OF 1965. IN ELGAR, A SENSE OF NATURAL FLOW MUST BE ESTABLISHED AS A BASE FROM WHICH THE MUSIC CAN BUILD ON AND DEVELOP. RUSH IS LETHAL TO ELGARIAN DRAMA. (IT IS NOT SIMPLY A MATTER OF SPEED, BUT SOLTI'S PERFORMANCE RAN 18:25, COMPARED TO BARBICHLI'S 18:15.)

ON THE PRESENT DISC, ANDRE PREVIN HAS CAPTURED THE CORRECT PACING AND PROPORTION AND PROVEN WHAT SOLTI COULD NOT, IN AN IDIOMATIC PERFORMANCE WITH THE ROYAL PHILHARMONIC ORCHESTRA THAT UNLEASHES THE POWER, GRANDEUR, AND PASSION OF THIS WORK, LETTING IT UNFOLD NATURALLY. THERE IS A WONDERFUL SENSE OF RIGHTNESS HERE. THE COMBINATION OF CONVINCING, PERFORMANCE, AND SUPERLATIVE RECORDING MAKES THE CD INDISPENSABLE, IF NOT DEFINITIVE. ONE CAN BE SURE WHILE WAITING THE CD RESURRECTION OF THE BARBICHLI, WHICH IN ANY EVENT IS UNLIKELY TO MATCH THE STAGGERING, FINELY DETAILED Sound captured here. Playing time: 51:43.

Robert R. Reynolds
A final word to CBS: Why are these fascinating interpretations unavailable on CD? If you wrongly believe that they won't sell on CD, at least release some sampler volumes of selected symphonies. These interpretations deserve the broadest possible public exposure.

K. Robert Schwarz

**RACHMANINOFF:**

**DOHNÁNYI:**
Variations on a Nursery Song, Op. 25.

**LITOLFF:**
Schéna, from the Concerto Symphonique for Piano and Orchestra, No. 4, in D minor, Op. 102.

Arthur Ozolin's performance of the Litolf Schéna not only matches older versions but, for once, commends the work as something more than a minor vehicle for egoistic exploitation. In the Dohnányi Variations on a Nursery Song, Ozolin faces formidable rivals from the recent London release featuring András Schiff as soloist with Georg Solti and the Chicago Symphony. One would have to call this contest a draw, were it not for the fact that Schiff and Solti accompany their lovely Dohnányi with a performance of the Tchaikovsky Concerto so boring as to rule their CD out of court.

What about the Rachmaninoff? To develop my first impressions into firm opinion, I went through my archives and spotted virtually every commercial recording of the Rach One. My conclusion: This account from Ozolin and conductor Mario Bernardi is equalled, but not surpassed, by two previous ones: Rachmaninoff's own with Eugene Ormandy, from 1940, and the Byron Janis/Fritz Reiner collaboration of 1958. Only those two recordings realize the immense dramatic and poetic potential of the concerto as well as this one does. Indeed, there is nothing in the score that Ozolin and Bernardi do not express to the fullest.

While it has been rumored for some time that Ozolin is the greatest virtuoso pianist in Canada, this release (playing time: 58:32) should help promote a higher claim: that he is currently one of the greatest young virtuoso artists in the world. André Cavrillon, move over!

**ROUSSEL:**

Ozolin, Toronto Symphony Orchestra, Bernardi. CBC SMCD 5052 (D). (Distributed by Intercon Music Group.)

In the past few months, there have been several Compact Disc issues of works of Rachmaninoff, some less than enthralling. But it is a pleasure to review this one. First, the couplings.

Arthur Ozolin's performance of the Litolf Schéna not only matches older versions but, for once, commends the work as something more than a minor vehicle for egoistic exploitation. In the Dohnányi Variations on a Nursery Song, Ozolin faces formidable rivals from the recent London release featuring András Schiff as soloist with Georg Solti and the Chicago Symphony. One would have to call this contest a draw, were it not for the fact that Schiff and Solti accompany their lovely Dohnányi with a performance of the Tchaikovsky Concerto so boring as to rule their CD out of court.

What about the Rachmaninoff? To develop my first impressions into firm opinion, I went through my archives and spotted virtually every commercial recording of the Rach One. My conclusion: This account from Ozolin and conductor Mario Bernardi is equalled, but not surpassed, by two previous ones: Rachmaninoff's own with Eugene Ormandy, from 1940, and the Byron Janis/Fritz Reiner collaboration of 1958. Only those two recordings realize the immense dramatic and poetic potential of the concerto as well as this one does. Indeed, there is nothing in the score that Ozolin and Bernardi do not express to the fullest.

While it has been rumored for some time that Ozolin is the greatest virtuoso pianist in Canada, this release (playing time: 58:32) should help promote a higher claim: that he is currently one of the greatest young virtuoso artists in the world. André Cavrillon, move over!

Thomas L. Doss
en, and more lastingly affecting. Rattle is only thirty-two years old; one assumes that he still has some maturing to do and that the peak he'll eventually reach will be of awesome height.

Rattle here dispenses with interpretive fat and emphasizes the too-often-ignored leaness of Sibelius's writing, even more than he did with his CBSO reading of the Symphony No. 2 and the Scene with Cranes from the incidental music for Kuolma (Angel EMI DSD 58159). The feeling of dynamic motion is pervasive and intense, but the significant rhythmic fluctuations tend to be large-scale. There are indeed many dramatic mini-pauses and many phrases made exquisitely supple by elongations of dissonant notes that cry out for resolution. There is no milking of the music for only momentary expressive purposes, however, or any real disruption of the music's flow once a movement gets going. The "little" nuances are important, for they make the music seem constantly warm, human, and intimate; but it is the "big" nuances—the minutes-long builds up to absolutely unambiguous climaxes—that give the music its strength and ultimately make the symphonic argument seem monumental.

The 1914 Oceani—s—not at all a programmatic tone poem, but certainly an evocative seascape whose vapor textures and surging volume levels, at least, owe a debt to Debussy's La Mer—holds out many temptations to conductors who know how to make a big splash with a virtuoso orchestra. Rattle does not succumb to them. His treatment is wonderfully effective, to be sure; but, as in the symphony, the effects he pulls off remain subordinate to the accomplishment: of broader, more noble goals. Playing time: 52:14.

Noah André Trudeau

**THEATER AND FILM**

**HORNER:**

**Gorky Park (soundtrack).**

London Symphony Orchestra, Horner, James

*Horne**n, prod. Varese Sarabande VCD 47260 (A) © STV 81206. © CTV 81206.

**Aliens (soundtrack).**

London Symphony Orchestra, Horner, Varese Sarabande VCD 47263 (A) © STV 81283. © CTV 81283.

It's difficult to fully assess the talent of James Horner. It's not that there's a dearth of material on which to base a judgment; on the contrary, he is one of the most widely recorded film composers of recent years. What makes evaluating Horner so difficult is the curious fact that one time out he is able to offer original and appealing scores, the next time out blatantly imitative pastiches, churned out for an industry that obviously rewards adherence to successful formulas.

**Gorky Park** (playing time: 36:05) is one of Horner's most interesting efforts. The main title (which admittedly took its unusual form from the juxtaposition of visuals opening the film) is an interesting mix of driving rhythms, effectively placed bell-like sonorities, and snippets of Tchaikovsky. The instrumentation is chamber-sized, and for once, Horner's textures are a pleasure. Recommended.

**Aliens** (playing time: 41:02) is such a total mélange of ideas lifted from other sources that I'm surprised Horner put his name to the work. In his space-opera/epic scores, Horner almost always slides in an otherwise uncredited classical steal. There was Prokofiev's Alexander Nevsky in Battle Beyond the Stars, Prokofiev's Romeo and Juliet in Star Trek II, and now Khachaturian's Gayane in Aliens. Horner also likes to take ideas from Jerry Goldsmith, and the quotations here are more obvious than usual, including the almost literal lift of a sequence (in "Ripley's Rescue") from Goldsmith's Capricorn One score. In this age of truth in advertising, how can scores such as this continue to appear with the credit "Music composed by James Horner?"

Varese Sarabande has lavished its usual care on the production of these Compact Discs. Sonics are first rate, and the indexing is all that one could wish for. Richard Kraft's laudatory essay on Horner's career (in the Aliens package) more than slightly overstates Horner's importance, I think.

---

**Deutsche Grammophon's**

**GALLERIA**

**Compact Discs at Sub-Compact Prices!**

Twenty Galleria CDs are now available at fine record stores nationwide. Also available on imported, digitally remastered LPs and Chrome-cassettes. For a complete list of repertoire, see the Galleria brochure at your local record store.

© 1987 DG / PolyGram Records, Inc.
### TEAC CASSETTE DECKS

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teac V-538X</td>
<td>$99.95</td>
</tr>
<tr>
<td>Teac D-425</td>
<td>$119.95</td>
</tr>
<tr>
<td>Teac D-525C</td>
<td>$149.95</td>
</tr>
<tr>
<td>Teac R-606X</td>
<td>$249.95</td>
</tr>
<tr>
<td>Teac W-660R</td>
<td>$269.95</td>
</tr>
</tbody>
</table>

### BEATLES CD SPECIAL

**BEATLES COMPACT DISCS**
- The first of The Beatles compact discs are now available: Original UK releases and new 2-track stereo reissues.
- 3 discs available.
- Please, please Me
- Hard Day's Night
- Help!

**SOFTWARE**
- Your CHOICE: $13.95 Each

### HOME SECURITY SYSTEM

- Schlage "Keepsafe Plus" Electronic Home Security System
  - 2-way voice intercom: Home, Away, Vacant
  - Siren, strobe, bell, panic button

### STEREO RECEIVERS

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nikko NR-5508</td>
<td>$159.95</td>
</tr>
<tr>
<td>Sherwood S-2770CP</td>
<td>$349.95</td>
</tr>
</tbody>
</table>

### JVC AUDIO COMPONENTS

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>JVC TD-W30</td>
<td>$219.95</td>
</tr>
<tr>
<td>JVC TX-570B</td>
<td>$229.95</td>
</tr>
<tr>
<td>JVC XQ700</td>
<td>$449.95</td>
</tr>
<tr>
<td>JVC XL7400</td>
<td>$229.95</td>
</tr>
</tbody>
</table>

### TECHNICS AUDIO COMPONENTS

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technics SL-P210</td>
<td>$299.95</td>
</tr>
<tr>
<td>Technics SL-P320</td>
<td>$99.95</td>
</tr>
<tr>
<td>Technics SL-PJ10</td>
<td>$149.95</td>
</tr>
</tbody>
</table>

### PHONOGRAPH CARTRIDGES

- Shure V15 Type V-MR
  - $149.95
- Audio-Technica AT-152MLP
  - $99.95

### JC WORLDWIDE"

**ORDER 800-211-8180 IN NEW YORK, ALASKA & CANADA CALL: (212) 693-0396**

23 Park Row, Dept. HFO587, New York, NY 10038
DIGITAL COMPACT DISC PLAYERS

Shure SV-45 $269.95

Programmable CD Player
• 15 function wireless remote with volume control
• 10 tracks random programming
• 5-year warranty
Black • List $399

Magnavox CDE-620 $219.95

Programmable CD Player
• Infrared remote control • 20 track programming
• Just Disc converters
• Overprints at 176.4 kbps • List $330

Teac PD-120 Remote CD Player $199.95

• 3 beam laser • Overprinting digital filter
• 16 track random programming • Index & direction speed search
Black • List $249

ADC CD-100X Programmable CD Player $129.95

• 5 -beam laser pickup • 16 -track programmable
• Metal chassis and transport
• Back trim • List $299

Magnavox CDS-1200 $399.95

Audiophile Compact Disc Player
• Flawless sound plus the ultimate memory
• Program up to 800 selections from your CD collection in permanent memory • List $449

VIDEO COMPONENTS

Sony AVC20 $469.95

Video/Hi-Fi System Expander
• Programmable clock 
• 2 -video monitor outputs
• Complete audio
diameter 
• Wireless remote • List $999

Pioneer LF-83RD $649.95

New Laser Videoic Player
• Supports ACD line inversion security
• Decodes digital sound lossless • Digital
t • Wireless remote • Black • List $1549

VIDEO HI-FI RECORDERS

Panasonic PV-1642 $649.95

Hi-Fi Video Recorder
• 4 -channel audio • 2 -video heads
• remote control • 31 day event timer
• Wireless remote • Black • List $999

Sony SL-HF750 $749.95

Super Beta Hi-Fi Video Recorder
• Pro quality 4 recording MTS/SAF decoder
• On-screen display • 21 -day event timer
• Advanced wireless remote • List $1799

Toshiba M-2700 $399.95

Hi-Fi Video Recorder
• Outstanding audio/video quality of new low
• 2 -video cassette system • 15 -function wireless
• Cable Ready • List $799

JVC HB-D270U $499.95

Hi-Fi Video Recorder
• Experience dynamic hi-fi stereo sound today
• Hi System • MTS/SAF cable ready • 5 -beam laser
• Advanced access infrared remote • Black • List $299

Shure FQ-15 $89.95

• FQ recording • List $150

• Spectrum analyzer • 4 -video monitor output
• 3 -camera inputs • 3 -camera inputs
• Complete audio • Wireless remote • Black • List $1799

ADC Sound Shaper SS-878V Electronic Preset Equalizer $99.95

• 10 bands per channel • 16 -band control
• 7800 selection • 4 -video monitor display
• Back • List $279

Teac EGA-S40 $199.95

Graphic Equalizer
• 15 individual sliders per channel • LED
• Spectrum analyzer display • Frequency
• 2 -way tone control • Subsonic filter • Black • List $299

ADC S-525X $399.95

Graphical Equalizer
• 10 bands per channel
• Automatic preset
• 12 bands per channel
• 16 -band control
• 3 -way tone control
• Subsonic filter • Black • List $150

VIDEO ACCESSORIES

Numark DM-1650 $249.95

Pro Series Mixer/Preamplifier
• Two phono/mic and two mic/line inputs with
• 5 -year warranty
Black • List $325

Sony MDR-V7 $89.95

New Digital Ready Headphones
• On -screen display • 21 -day event timer
• Remote control • Cable Ready • List $799

Now to Order by Mail: Send money order, certified or cashier's check, MasterCard, Visa or discover card (include card number, expiration date and signature) to: J & R Music World, 16 Park Row, New York, NY 10038

THE OUTLET CENTER BEFORE PROCESSING.

J & R Music World, 16 Park Row, New York, NY 10038. DEPT. NV587. DO NOT SEND CASH. Personal and business checks must clear our institution before processing.

15% Minimum Order Discount. Handling & Insurance Charges: 15% of Total Order with a $9.95 minimum. (Minimum Orders Add 15% Shipping, with a $9.95 minimum charge.) For shipments by air, please double these charges. SOBEY, NO C.O.D.'S.

We are not responsible for any typographical or transposition errors.
Roll up for a fast-paced, multiformat field day: more than 35 mini-reviews of LPs, cassettes, Compact Discs, videocassettes, and videodiscs.

MINI-A-TOUR

As regular readers of this magazine know, our monthly column “In Short Order” offers mini-reviews of popular music recordings on various formats. This month, owing to the great wealth of recent material that we wish to cover, we are devoting the entire Backbeat section to mini-reviews. And in the spirit of this issue’s car stereo coverage, we take you on a scenic/sonic drive by way of all five formats—including videodiscs, which will be reviewed more frequently in the future.

A reminder: The heading for a mini-review is a condensed version of the heading used in our full-length reviews. Please note that this revised heading supplies only the reviewed format and its catalog number (and, in a few cases, a mail-order address).

A teaser: Next month, we review the Beatles on Compact Disc and video.
BEASTIE BOYS:
Licensed to Ill.

THE BEASTIE BOYS ARE LOUD AND LEWD.
"Being bad news is what we’re all about," boasts one set of lyrics on Licensed to Ill, the biggest rap album ever. "We went to White Castle and got thrown out." Elsewhere, they eulogize the joys of girls, gunplay, and getting high. A parent’s worst nightmare, you bet. But that’s the point: Outrage all the right people and create the ultimate teenage music, uniting those who revolt against poverty and those who revolt against affluence. The Beasties cut-and-paste Barry White, War, Led Zeppelin, and Whodini, among others, fitting them into astounding rap/rock grooves. They even approach this hybrid from the AC/DC side with "Fight for Your Right," the most rebellious anthem since Twisted Sister’s "We’re Not Gonna Take It." Despite the obnoxious veneer, Licensed to Ill is among the most entertaining L.P.s you’ll ever hear.

Havelock Nelson

ERROLL GARNER:

ERROLL GARNER WAS ONE OF THE MOST POPULAR JAZZ MUSICIANS OF THE '50S AND '60S, and this was one of his most popular albums. It was recorded, astonishingly, in a long session in March 1955 when Garner had a broken left index finger. He made 20 numbers that afternoon; 12 are on this 68-minute C.D. including all the pieces from the original L.P.

several from Erroll, and the previously unissued “Sleep.” Garner’s oblique intros and his broadly declamatory chords and peg-legged walking bass were the expression of a man with a powerful dramatic sense and an elfin sense of humor. This is an excellent introduction to his work. Michael Ulman

BARBRA STREISAND:
My Name Is Barbra. CBS/Fox Video Music V 3519-24 (Beta), 3519-34 (VHS).

Color Me Barbra. CBS/Fox Video Music V 3518-24 (Beta), 3518-34 (VHS).

These two icons of nostalgia—Barbra Streisand’s first TV specials from the ’60s—remind us how incredibly mature her vocal art was even at conception. Twenty years later, however, what had initially fascinated the public—the Brooklyn accent, the manic monologues, the vulnerability—now seems like an overworked joke, and two thirds of these tapes are dedicated to personas that are cute but ultimately taxing. Color Me Barbra features an exquisite romp through the Philadelphia Museum of Art, in which she “tries on” various paintings and sculptures, but you’ll have to be a die-hard fan to love the close-ups of the nose, the mouth, and the incredibly crossed eyes. When stripped of her mannerisms and dressed in the simplest gowns, though, Streisand does what she has always done best: sing. My Name Is Barbra, recorded during her Broadway run of Funny Girl, features a medley from the show that is surprisingly pure—and simply mist-provoking. But in general, these videos left me feeling, “What a voice. What a talent. What a shrirk.” Pamela Bloom

JING/Chemical Wedding:
Jing/Chemical Wedding. Off the Board 609. (c/o CBG, 315 Bowery, New York, N.Y. 10003.)

FANS OF THE LATE, LAMENTED BROOKLYN BAND the Shirts will want to grab this tape to catch up with two of its members. Guitarist Arthur Lamonica now leads a quintet bearing his new surname, Jing, and there are plenty of his trademark hooks in these six samples of keyboard-centered pop. Artie still quips mostly about the many faces of love, with the social commentary of the fine “World Gone Mad” thrown in for good measure. Meanwhile, Shirts bassist Robert Racioppo, now dubbed Neo Plastic, is the frontman for the quartet Chemical Wedding (augmented on these five tracks by fellow Shirts Ronald Ar-
ditto, alias Maurice Rev). Bob has switched to guitar, yet his band leans on a hard-dancing mix of bass and percussion, and he still sings in his endearing twisted-Turkish-Taffy voice. Absolute gem: the slab “Just Like Mondrian,” which was a hit in the Midwest. The sound of this cassette is a little thin in places but generally good. Try to see these bands live, too; I saw Chemical Wedding the other day, and like the Shirts, they positively smoked on stage.  

**WILLIE NELSON AND FAMILY:**

In Concert. CBS/Fox Video Music 66238. This early-eighties HBO special was shot live before an Austin home crowd, the first half a straightforward presentation of the then current Tougher Than Leather album, the second half a more typical, free-flowing Willie Nelson show full of his own country classics and some recent pop ballads. Visually, there’s nothing fancy—nor should there be for this most laid-back of artists. Soundwise, this videodisc particularly sparkles, especially in Nelson’s beat-up acoustic guitar notes, sister Bobbie’s piano figures, and Mickey Raphael’s brisk harp blowing.  

**LADY SMITH BLACK MAMBAZO:**

*Inala.* Shanoche 43040. The brilliance of *Inala,* Lady Smith Black Mambazo’s third U.S. release, underscores Paul Simon’s contention that his collaboration with the South African a cappella group on Graceland was precisely that and not some boycott-busting form of cultural colonialism. In rock’s ongoing dialogue between voice and beat, the role of group harmonizing has all but disappeared from even its traditional wellspring, black pop. Ladysmith’s intricate conversational style may be as important in refreshing our appreciation of the joyous sounds of human voices working in unison as it is in granting us some understanding of the music and the people of a troubled land.  

**VARIOUS ARTISTS:**

*Soweto Never Sleeps.* Shanoche 43041. Fortunately, this well-produced set of “Classic Female Zulu Jive” features the Mahotella Queens, for they are certainly the female masters of Soweto’s ngqasho, or “indestructible beat.” And when they’re joined by “groaner” Simon “Mahlathini” Nkabinde on call-and-response songs, the party goes even more vocals and some swinging guitar riffs interwoven on highlight track “World Favourite,” but the imitation of rock “Hymnies Come to Soweto” flummox musically. Two Mahotella splinter groups are also represented: Irene and the Sweet Melodians (“Let the Weekend Come”), who keep up the pace despite a dull mix, and the Mgbaba Queens (the title track), who can’t seem to find the common ground in jive where the mother group reigns. Voices are distinct on the Dark City Sisters’ “The Musicians,” but their hymnlike “Outside South Africa” doesn’t hold up.  

**McCOY TYNER:**

*Double Trios.* Denon CT 1128. Blue note recently released a pleasant MOR-jazz recording featuring McCoy Tyner with Jackie McLean; it worked well, largely because it didn’t try too hard to cross over. This piano-plus-rhythm CD retains the mellowed-out quality of that set and will probably win Tyner new converts, offering as it does the full acoustic range of his pianistic dynamism within the confines of such easy-to-hear tunes as “Satin Doll” and “I Love Man.” Although Tyner’s emergence as a mainstream artist may permit some older fans, it is a mask he wears gracefully: Underneath it are his many teeth, and their cutting edges are still quite sharp.  

**THE SECOND HALF: MORE TYPICALLY WILLY:**

Boycott-busting form of cultural colonialism. By “groaner” Simon “Mahlathini” Nkabinde on call-and-response songs, the party goes even more vocals and some swinging guitar riffs interwoven on highlight track “World Favourite,” but the imitation of rock “Hymnies Come to Soweto” flummox musically. Two Mahotella splinter groups are also represented: Irene and the Sweet Melodians (“Let the Weekend Come”), who keep up the pace despite a dull mix, and the Mgbaba Queens (the title track), who can’t seem to find the common ground in jive where the mother group reigns. Voices are distinct on the Dark City Sisters’ “The Musicians,” but their hymnlike “Outside South Africa” doesn’t hold up.  

**JOE ELY:**

Live from Texas. Praxis Media PMP 918V [Beto, VHS]. (Boritz Productions, 18 Marshall St., South Norwalk, Conn. 06854) Taped last September before a supportive and clearly juiced crowd, this video showcases Joe Ely in the best possible light: leading his band through barroom basics at a stagecoach-stop-turned-dance-hall in Gruene, Texas. Given the ups and downs of his career (he was dropped by MCA soon after this concert) and his recent failed flirtation with synthesizers, the sight of Ely confidently reprising some of his best country-rock barnstormers is comforting. Down-home music and locale notwithstanding, *Live from Texas* features digitally recorded sound and crystal-clear camera work—nothing low-tech here. Even better, from inspired versions of “Dallas” and “Fools Fall in Love” to raunchy rip-throughs of “Cool Rockin’ Loreta” and “Musa Notta Gotta Lotta,” this tape makes for a dandy Ely anthology. And that has been a long time coming.  

**LOS LOBOS:**

By the Light of the Moon. Slash/Warner Bros. 55231-3. Though it may not kick in quite as forcefully as their previous efforts, this proves to be Los Lobos’ finest recording. The quiet now reminds me more of the Band than of anyone else—not that they sound like that group, only that they share the importance of ensemble work and the virtues in saving your piece quickly and then getting out. As the Band did, Los Lobos have transplanted their barroom roots; those roots, from Tex-Mex to Motown, are still resonant, but they’ve been molded into 5 new idiom. As before, Cesar Rosas writes and sings the jook-joint rockers, while the songs by David Hidalgo and Louie Perez are meant to be deeper looks at promises kept and broken in America today. Los Lobos have kept theirs, and then some.  

**ROOMFUL OF BLUES:**

Dressed Up to Get Messed Up. Varrick CD 018. Roomful of Blues is an oddity, a group of musicians with various ethnic backgrounds and a wide range of ages (the eldest, a trombonist named Porey Cohen, is in his sixties) who play blues, soul, and ’50s rock ‘n roll. They’ve backed up blues stars (Joe Turner, Jimmy Witherspoon), and now they have a CD of their own. They’re at their best on glorified & numbers like “Money Talks” and on “The Last Time,” which adds the lead vocal of Kim Wilson from the Fabulous Thunderbirds. As blues players, they create a rollicking sound, but they lack character and, finally, commitment. This CD may be useful at
<table>
<thead>
<tr>
<th>Product</th>
<th>Price</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>JVC PCW35</strong></td>
<td>$99</td>
<td>Portable double cassette, detachable 2-way speakers, 5-band graphic equalizer</td>
</tr>
<tr>
<td><strong>TEAC V850X</strong></td>
<td>$319</td>
<td>Dolby B+C+dbx cassette deck, 3-head, 3-motor, real time counter &amp; music search</td>
</tr>
<tr>
<td><strong>SONY CDP35</strong></td>
<td>$179</td>
<td>3-beam CD player, 20 track random program, 9 pole final stage filtering</td>
</tr>
<tr>
<td><strong>TEAC R606</strong></td>
<td>$229</td>
<td>Dolby B+C+dbx cassette deck, bi-directional rec/play, intro-scan, blank scan</td>
</tr>
<tr>
<td><strong>TEAC R606</strong></td>
<td>$229</td>
<td>Dolby B+C+dbx cassette deck, bi-directional rec/play, intro-scan, blank scan</td>
</tr>
<tr>
<td><strong>QUASAR 4-HEAD</strong></td>
<td>$289</td>
<td>4-head VHS VCR, HQ, cable ready, variable slow motion</td>
</tr>
<tr>
<td><strong>JVC HRD470</strong></td>
<td>$589</td>
<td>4-head HIFI, HQ, MTS, 8 event/14 day, random access</td>
</tr>
<tr>
<td><strong>SONY D-10</strong></td>
<td>$259</td>
<td>Portable disc man, smallest disc player on the market</td>
</tr>
<tr>
<td><strong>SHARP VHS HIFI</strong></td>
<td>$369</td>
<td>HQ circuitry, 110 channel tuner with multi-channel, TV sound</td>
</tr>
<tr>
<td><strong>CONCORD HPL550</strong></td>
<td>$299</td>
<td>Dolby B+C+dbx car stereo, 6 AM + 18 FM presets, music search and clock</td>
</tr>
<tr>
<td><strong>EPI LSR34</strong></td>
<td>$189</td>
<td>Auto-reverse car stereo, digital, Dolby B, music search, CD input</td>
</tr>
<tr>
<td><strong>JENSEN JTX 300</strong></td>
<td>$59 pr.</td>
<td>6 x 9 triax car speakers, 80 watts RMS/speaker, trusted reputation</td>
</tr>
</tbody>
</table>

**DISCOUNT HOTLINE**

800-356-9514  OR CALL 608-271-6889

WISCONSIN DISCOUNT STEREO
2417 W. BADGER RD.
MADISON, WI 53713

* Extended warranties available
* Thousands of specials—call!
* Over $30 million inventory
* Most orders shipped within 48 hrs.

* WE SERVICE WHAT WE SELL! *
TOLL FREE SERVICE 1-800-448-3378

* SOME ITEMS CLOSEOUTS, SOME LIMITED QUANTITIES *
parts, but I wouldn’t trade any of my James Cotton or Muddy Waters LPs for it.

Michael Ullman

JIMI HENDRIX:

◊ Band of Gypsys 2, Capitol SJ 12416

SOMEONE SHOULD GET PRODUCER ALAN Douglas a toothpick so he doesn’t miss a bit of the Jimi Hendrix career he has been feasting on. That, said this latest excursion into the vaults—one of outtakes from arguably the greatest all-black rock band ever tocall themselves that, one side with Mitch Mitchell on drums—is of far higher quality than much of the Jimihiila he has been putting out of late. Problem is, we’ve heard it all before. So while “Hear My Train a-Comin’” has some inspired playing, is another “Voodoo Child” or “Foxy Lady” really necessary? This is a highly enjoyable LP but not the revelation it has been built up to be. Shame, too.

Hank Woodson

FAIRPORT CONVENTION:

◊ House Full, Hannibal HBL 1319

WHATEVER LYRiC SPIRiT THAT FAIRPORT Convention lost when vocalist Sandy Denny left, these plugged-in traditionalists made up for it in a functional instrumentation. Dave Swarbrick’s dervish fiddling and Richard Thompson’s out-of-left-universe guitar work are the grabbers in this 1970 live set, but the glue is drummer Dave Mattacks’s lumpy precision. The leisurely “Slosh” jam suggests F.C. had been digesting the Grateful Dead’s bread; their breakneck jigs, though, could have been textbook material for the Ramones.

Steve Patten

MANNTRONIX:

◊ Music Madness, Sleeping Bag TLX 8

MANNTRONIX SONGS GLIDE, SKIP, AND FRISK the way conventional rap doesn’t. M.C. Tee doesn’t disrespect women, the Moral Majorit, or comedic decorum, and his voice is refreshingly adolescent, not in-your-face like L.L., Cool J’s or the Beasties’. MANNTRONIX, the machine half of this duo, covers his partner up with sounds that vibrate inexplicably—brassy fanfares that are freeze-framed and rewound, rhythms that stutter, counterrhythms that gather. On “Big Band B-Boy” and “Listen to the Bass,” Tee is replaced altogether. But MANNTRONIX’s supple tracks stand on their own anyway, and as he has shown with Nocera’s “Summertime, Summertime,” a tune he mixed, they’re ready to go pop.

Havlock Nelson

BILLiE HOLIDAy:

◊ The Billie Holiday Songbook, Verve 823 246-2

At Monterey/1958.

WHERE IS THE DISPARITY BETWEEN the young, life-embracing singer of the ’30s and early ’40s and the bruised, aged-before-her-time Billie Holiday of the ’50s more apparent than in this collection of trademark songs she recites for Verve. Better-or-worse judgments just don’t apply here: The vocal timbre may have hardened, but these seasoned interpretations are so marked by dis-vested emotion and hard-won insight that they are essentially different songs. Billie’s artistry keeps them free of maudlin sentiment and self-pity. But not even Holidays
could rise above the travails all the time; on Monterey, recorded a year before she died, she sounds almost beaten. Her trio and guest star Gerry Mulligan are more than game, but Holiday’s performance never rises above the perfunctory—probably an accomplishment in itself. A bit too close to the bone without hitting any aesthetic nerves, Monterey might have been better left in the vaults.

Steve Fairman

CHERYL WHEELER:


** Songwriter/vocalist Cheryl Wheeler made a few tentative forays into the Big Time in the mid-Seventies, playing showcases at New York City clubs. Her voice and presence were first-rate, but her music—a pastiche of covers and a few naive originals—was unmemorable. Now she’s back with a vengeance on her independent debut. The 11 tracks articulate love and pain with a fresh voice, and Wheeler paints several striking portraits: the craziness/loneliness of an “Invisible Lady” in a pizza joint, the “Lethal Detective” caressing his spy paraphernalia and skulking around almost for the thrill. Wheeler also makes an astute cover choice in “Game of Love.”

Leslie Berman

BOB GELDOF:

* Deep in the Heart of Nowhere. Atlantic 81687-1.

Give this a casual listen, and it isn’t too bad; the big pop production’s attention to detail and the Bowie-esque throb of Bob Geldof’s singing can be pleasant. But once you get into the lyrics, you’ll find that it’s this samesentimental delivery that gives these well-meaning jeremiads their disagreeable tone. It’s as though Geldof had decided that self-pity is the proper response to suffering in the world. Bob was a witter fellow with the Boomtown Rats; maybe it was the band. In sum, maudlin.

Richard C. Wallas

THE MANHATTAN TRANSFER:


None of the five ambitious video clips from the Manhattan Transfer’s 1985 Vocalise LP have been widely seen, though all are better than 90 percent of those that have. As the group’s Tim Hauser explains in a charming press-conference intro, “vocalise” is the singing of bebop lyrics to classic jazz instrumental solos, and this the Transfer does, gloriously on video disc. “Blee Blop Blues” stands out for its hysterical use of the I Love Lucy television/ studio set, with the quartet mastering the comedic roles as readily as the complex vocals. But “To You” is equally memorable, with its simple, black-and-white, in-studio face-off between the Twin and the Four Freshmen.

Jim Beismann

CROWDED HOUSE:

* Crowded House. Capitol 4XT 12485.

Contents of house: four okay songs, six spectacular songs (Side 2’s “The River” and all of Side 1), lively Mitchell Froom sound, and edgy guitar and abundant hooks from Neil Finn (of Split Enz). What more could you ask of great pop?

Ken Richardson

THE POINTER SISTERS:

* Hot Together, RCA 5609-1.

With Break Out, the Pointer Sisters brought their steamy postdisco glitz to perfection. This is RCA’s second attempt to recapture that perfection—and what a waste of talent. It’s time for producer Richard Perry to consult his astrologer—or at the very least get a new stable of songwriters—because few of these numbers support the Pointers in the manner to which they are accustomed (irresistible exception: “All I Know Is the Way I Feel!”). Even the drum machines sound bored.

Billy Joel

WILLIE COLLINS:


Wille Collins hardly fits the standard profile of a hearthrob vocalist: A full-time New York City mailman, he was seen singing at a small club one weekend and so impressed a record executive that he landed a date on a major label. What’s even more surprising is that Collins sounds like the kind of down-home singer who’s recorded mostly by independent/Southern labels. Though the trappings of slick, love-man pop sometimes crop up, Collins wails, shouts, and stretches out in true soul fashion. It’s refreshing to know that the drudgery of the Post Office hasn’t worn down his vocal enthusiasm.

Ron Wynn

HANK MOBLEY:

* Straight No Filter. Blue Note BST 84435.

This is an unintentional memorial album: The great postbop tenor saxophonist Hank
MAIL TO: 825 7th Ave., 7th floor, New York, N.Y. 10019 Phone 1-800-ABC-MAGS. In New York call (212) 887-8458. GENERAL: All copy subject to publisher approval. Users of P.O. Box MUST supply permanent address and telephone number before ad can run.

CLOSING DATE: 1st of second month preceding cover date. 15 Word minimum. No charge for Zip Code.

CLASSIFIED RATE: Regular type, per word: $2.75. 3x—$2.55, 6x—$2.50, 12x—$2.50. Words in caps—15x extra each: IMPERIAL type, per word: 1x—$3.75, 3x—$3.65, 6x—$3.55, 12x—$3.45. Words in caps—15x extra each. Minimum 15 words. Box numbers $2.00 additional per insertion to cover cost of handling and postage. Display, per inch: 1x—$350, 3x—$340, 6x—$330, 12x—$315.

PAYMENT WITH ORDER: Send check, M.O. MASTERCARD or VISA No. and expiration date to Maria Manasen, Classified Dept., HIGH FIDELITY, 825 7th Ave., 7th Floor, New York, N.Y. 10019.

DIRECT SIGHT AND SOUND, America’s best kept audio and video secret, continues to please. Five years and over 40,000 customers later, we still offer the best in audio video, and auto sound including esoterics at incredible prices! We sell and service only U.S. warranty merchandise! Our staff is not only knowledgeable, but helpful and courteous in choosing the right component for you. Become one of the ELITE! Call 404-351-6772. Direct Sight and Sound, 3095 Rolling Way, Dept. H, Atlanta, Ga., 30305. MC/Visa/Alex. COD with deposit.


CALL US LAST !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! Shop around, get your best price, then call THE SOUND APPROACH. Guaranteed lowest prices on all HOME and CAR STEREO. Factory fresh, fully warranted. For FAST FREE DELIVERY and GUARANTEED LOWEST PRICES, call THE SOUND APPROACH, 6067 Jericho Tpke., Commack, New York, 11725 (516) 499-7680. Visa/MC/Amex.

THEY DON’T DISCOUNT IT? WE DO! GET LOW PRICES on ALL types of audio equipment—including high-end and even esoteric products not normally discounted! Now we can save you money on the equipment you REALLY WANT. Extensive selection—no need to settle for second choice. Thousands of satisfied customers nationwide. Call us for price quotes or friendly, expert advice. Catalog $1. 616-451-3868. Visa/MC/Amex. THE AUDIO ADVISOR, INC., 225 Oakes Southwest, Grand Rapids, MI 49503.

BANG & OLUFSEN FULL LINE, ADS, B&W AND BOSE SPEAKERS AND OTHER QUALITY PRODUCTS AT REASONABLE PRICE. SOUNDCREST, (201) 756-4858


SAVE 50% BUILD YOUR OWN SPEAKER SYSTEM With McGee Radio Electronics. 1901 McGee Street, Kansas City, Missouri 64108 Call Toll Free 1-800-346-2433

CALL TOLL FREE 1-800-826-0520 FOR ACQUASTAT, DAHLQUIST, NAD, HAFLER, DENON, dbx, 300, PROTON, TANDBERG, BELLES, ORACLE, M&K, GRADO, NITTY GRITTY, AUDIOQUEST, NEC, DUNTEC, MONSTER, SUMIKO PERREAUX, CWD, SNELL, B&W, DEM, THOREN'S, VSP, STAX, SOTA, GRACE, ASTATIC, DYNAVECTOR, THE SOUND SELLER, 1706 MAIN STREET, MARINETTE, WI 54443, (715) 735-9002.

WE SELL SECOND HAND HIGH QUALITY AUDIO-VIDEO with money back guarantee! Send your name and address for FREE monthly inventory. Ross Stereo, 4912 Naples Place, San Diego, CA 92110 (619) 560-5500

LOWEST POSSIBLE PRICES ANYWHERE! FULL WARRANTY — Most Audio Brand!! CD Players-Car Products-Computers & Peripherals. Your One Stop Electronics Supply Headquarters!! ELECTRIFIED DISCOUNTERS, 996 ORANGE AVENUE, P.O. Box 151, WEST HAVEN, CT 06516, MC/Visa/Amex (203) 937-0106.

FACTORY ORIGINAL DIAMOND NEEDLES & PHONO CARTRIDGES. MOST POPULAR LINES AT DISCOUNT PRICES. FOR FREE CATALOG SEND SELF ADDRESSED STAMPED ENVELOPE. LYLE CARTRIDGES, DEPT. H, BOX 158, VALLEY STREAM, NY 11582. CALL TOLL FREE (800) 221-0906, N.Y. (516) 599-1112. Visa/MC.

COMPACT DISCS—at low warehouse prices. Now in our fourth year. Over 6,000 titles available. Free catalog plus regular updates and monthly specials starting at $10.00. OZ Warehouse 5246H Memorial Drive, Stone Mountain, Ga. 30083 (404) 292-5451

A monthly listing for CD or LD swapping. Free sample copy THE CD TRADERS, 5818 Santa Cruz Ave., Richmond, CA 94804

AMERICAN DIGITAL OFFERS AN EXTENSIVE LINE OF HOME VIDEOS AND COMPACT DISCS AT DISCOUNT PRICES.

CABLE TV

CONVERTERS/DECODERS GUARANTEED LOWEST PRICES IN U.S.

Call 1-804-797-5861.

High-end and hard-to-find audio components. Low prices! AUDIO AMERICA (Virginia).
Mobley died in May 1986, and these sides, from '63, '65, and '66, represent the last of his previously unreleased material. But though this may be odds and ends, it’s by no means dregs. Three different quartets, featuring Lee Morgan, Freddie Hubbard, McVey, Tyner, Herbie Hancock, and (of course) Billy Higgins, work out with the usual aplomb on a variety of favored early-Sixties formats. Highlight: Mobley’s “Chain Reaction,” an 11-minute modal piece à la “Impressions/So What” that displays his ability to be hard-driving and almost wistful simultaneously. For Mobley fans, a must; for others, a good sampler. Richard C. Wallis

JONATHAN RICHMAN, THE MODERN LOVERS:

It’s Time for Jonathan Richman.

No matter “what the calendar said” in this disc’s highlight track “Just About Seventeen,” Jonathan Richman thankfully remains teen at heart. His continued preoccupations with that age’s hopes and dreams are further reflected in the rest of the dozen tunes here, and while a few are too slight, others like “This Love of Mine” and “When I Dance” reveal in the poignance and sincerity of his boundless idealism and optimism.

On CD, Richman’s deliberately unpolished, gut-level honesty rings clearer than ever, thanks to beautifully simple rock’n’roll melodies, minimal rhythm accompaniment, and similarly unaffected doo-wop backup singing.

Jim Bessen

PETER, PAUL, AND MARY:

No Easy Walk to Freedom.

Gold Castle 171 001-1.

Peter, Paul, and Mary offer few surprises on their new LP; still, it’s reassuring that their fervor for social justice hasn’t waned.

The cover photo shows them getting arrested at the South African embassy, and the title song repeats the anti-apartheid theme. That cut and “Light One Candle,” for Jewish dissidents in Russia, rank with their best protest material. There are solos—Mary on “I’d Rather Be In Love,” Paul on “State of the Heart,” Peter on “Whispered Words”—but it’s their passionate three-part harmonies that get me every time.

Kate Walter

HUSKÈR DÙ:

Warehouse Songs and Stories.

Warner Bros. 25544-1 (2).

Despite its skimpy 8-minute running time, this double LP vigorously reinforces Husker Du’s reputation as the most uncompromising band recording for a conglomerate. But unlike last year’s Candy Apple Grey, it introduces some fresh elements amid the usual clang and clatter: near-Beauteque hooks (“Friend, You’ve Got to Fall...,” “Maha Can’t You Be the One?”), riveting sensations of Crazy Horse-era Neil Young (“Bed of Nails,” “Charity, Chastities, Prudence, and Hope”), and even the first recorded merger of Celtic music, the Birds, and Husker’s thrash (“She Floated Away”). Warhorse would have made a tighter single album, but it’s unlikely to win over any new admirers, but such are the drawbacks of sticking to your guns.

David Browne

GINGER BAKER:

Horses and Trees. Celluloid Cell 6126.

Talk about out of Africa, here comes Ginger Baker, well-known rock recluse, with an international cast of dozens, making a lot of noise that says very little. These six instrumentalists are good, a little beyond droning New Age stuff, but tracks like “Mountain Time” don’t bear repeating, as they are repetitious enough. “Interlock” sounds a bit like a dub track from the Golden Palominos, largely owing to Nicky Skopelitis’s 12-string work. But the real agenda here—crowning Baker’s kit work with the sounds of talking-drummer Aivi Dieng—gets lost in producer Bill Laswell’s secret sauce.

Hank Bordowitz

VAN HALEN:

Live Without a Net.

Warner Reprise Video 38129 (VHS only).

On its current 90-minute video, Van Halen (or should I say “Van Hagar?”) has done its best to blot out the existence of its former lead singer. Ignoring the bulk of a decade’s worth of great stuff and concentrating on material from 5150, the band fills in the holes with drawn-out solos by the three remaining original members, and all of them are long and boring on video. Then there’s a lavish encore of Led Zeppelin’s “Rock and Roll.” Edward Van Halen is still one of the hottest things on six strings, but Sammy Hagar lacks the flamboyance and imagination this band needs in a frontman. The sound is superb, but the stage lights wash out many images. And even the pyro is less than impressive.

Hank Bordowitz

THE CHARLIE WATTS ORCHESTRA:

livet Pulham Town Hall.

Columbia CK 40570.

There are big bands, and then there are huge bands. On this husman’s holidays from the Rolling Stones, closet jazz fan Charlie Watts gives work to more than 30 of his Brit buddies, cutting them loose on swing and bop standards. Its rock’n’roll excesses (does any band really need three drummers and two vibists?) also contribute to its rousing, over-the-top spirit. The repertoire could be a bit more daring, the charts lean toward Vegas, and the horn soloists aren’t identified, but I’ll take this over Mick Jagger’s solo album anyday. The CD gives more clarity to the swelled rhythm section, but both LP and CD retain the band’s elephantine punch.

Steve Fuller
**VARIOUS ARTISTS:**

**New Jersey Rock S.**  WDHA DHA S.

This is the fifth collection of Garden State artists compiled by WDHA, a rock radio station based in Dover (105.5 FM). The CD sound is admirable, though not outstanding. No matter: The music is what counts. No tired Springsteen copies, just wonderful, original pop-rock. To lengthen the CD to a generous 69 minutes, the 13 unsigned artists here are joined by major-label contractees Glen Burtnick, Joe Lynn Turner, and the Smithereens. Add virtually all of the unsigned acts deserve a break, ranging from Carolyn Max (who returns with a beautiful ballad) to Winter Hours (wide-open guitars) and even Angelz (fun metal, truly). By the time you read this, the limited-edition CD may be sold out, but fear not: Cassette copies are available from WDHA, 419 Route 10, Dover, N.J. 07801.

Ken Richardson

---

**E.U.1**

**2 Pieces at the Same Time.** Island 90536-1.

On the basis of this live set—one side recorded at New York City’s Irving Plaza, one side before an audience in a hometown studio—it’s clear that the Washington, D.C., band E.U. represents the more melodic wing of go-go. Can it be a coincidence that it is the only such group to also show a marked Sly Stone influence? E.U. remains, happily enough, just as rhythmically combustible as Trouble Funk and other more celebrated go-go bands; Side 2 in particular struts like nobody’s business. This comes courtesy mainly of drummer William “Juju” House and assorted other percussionists, but the horn section has plenty of punch, and the band is also blessed with a prickly guitarist in Valentino “Tino” Jackson. E.U. shouldn’t remain the dark horse of go-go for much longer.

John Marchland

---

**JENNIFER WARNES:**

**Famous Blue Raincoat.** Cypress 661111-2.

Leonard Cohen’s haunting songs were among the finest covered in the ’60s because they called to mind so many tender and tearful moods. On this recording, Jennifer Warnes sings nine of his songs, including “Bird on a Wire”; though she strikes no new ground with that number, Warnes proves she is a stylist with range in other choices of more obscure material. It’s an ambitious project, yet she gives each jazz-poem lyric its own reading, interpreting quite clearly Cohen’s usually inscrutable symbolism. Cohen himself is the guest vocalist on “Joan of Arc,” and Stevie Ray Vaughan plays guitar on “First We Take Manhattan.” The production is a bit overlaid with synthesizers and strings, but it is disturbing only on this CD version, where the original mix’s failure to individualize sounds is especially noticeable.

Leisle Bernard

---

**NANETTE NATALI:**

**Hi Fi Baby.** Benya Music BY 3335.

Nanette Natali’s vocal styles are so pure and unpretentious that they seem to belong to another age. On her third album, she makes passing references to Ella, Sarah, and Elvis, but her unique sense of phrasing steers totally from a brilliant connection to her own instrument—an intimate but voluptuous little creature that can suddenly go on a roll and soar into magnificent flights of improvisational fancy. A composer and arranger of no small worth, Natali has labored in the downtown New York scene for the last 20 years because of her low-gloss profile as well as her insistence on self-production, but it’s exacting this battle of mainstream megalomania that makes this disc so compelling. Natali’s biggest treasure is her scat that never obscures a song in esoterica; the African reggae of “Lose Control,” particularly showcases linguistic outbursts that are deeply rooted in primal emotions. If there is a feminist tinge to any of her work, she has tucked it inside an expansive spirituality that makes no distinctions between the sexes. Simply, she is—without question—available for anyone in search of a good, honest voice.

*Pamela Bloom*

---

**ALBERT COLLINS, LONNIE MACK, AND ROY BUCHANAN:**

Further on Down the Road, Praxis Media (PMP 912 Beta, VHS). (See Joe Ely address.) This is not your basic concert video: Production values are high, camerawork is ambitious, and the acoustics of Carnegie Hall, which the engineers do their best to live up to, need no introduction. The interviews with celebrities musicians are the usual gush, though Dicks Betts puts Lonnie Mack in context pungently and Robbie Robertson credits usual entertaining self talking about Roy Buchanan. And the music? It’s mostly fine, thank you. Albert Collins is cool and clean, as always, though the use of split-screen during his set is clumsy and distracting. Mack starts out solo acoustic and adds players until the whole band is wailing and the whang bar is working overtime, his mctay solos soaked in tremolo. After those two, Buchanan sounds like the Edward Van Halen of blues rock. For 90 minutes, Carnegie Hall is Guitar Town.

John Marchland

---

**MARTI JONES:**

**Match Game.** A&M SP 5138.

And you thought Boston’s album was the perfect indication that the great ’70s revival is upon us. Match Game uses one of the favorite gambits of that lost decade: The heralded new vocalist, hooking up with a couple of crack bands and some sessioneers, tackles classics old and new (many specially written for her by the finest contemporary songwriters). Neither Marti Jones, a singer of some distinction, nor Don Dixon, an estimable producer and musician in his own right, deserves to be flipped off. But it is certainly puzzling that on an outing featuring so many of New Wave’s finest grabbeards, the best tunes are, well, kind of Teen Pop.

Wayne King

---

**MINI-A-TOUR**

FELA ANIKULAPO KUTI:

*In Concert.* View Video 2305 (Beta), 1305 (VHS), (34 E. 23rd St., New York, N.Y. 10010). This 1981 Paris concert starts very slowly but builds relentlessly on the simplest riffs until it creates meaning through repetition itself. The dancing girls and occasional sexual metaphors are just window-dressing for an underlying message that is always political. (It can be somewhat droll watching French teenagers boogie to lyrics about colonization and exploitation.) Fela’s act is highly visual: As he struts his stuff, his wives shimmy and shake in colorful costumes and vivid make-up, yet the serious mood is never lost. Though the camera work is smooth, the audio gets muddy; the subtle African bass should not, cannot, be recorded like jazz or rock. Still, Fela is someone Americans need to get familiar with, and video is certainly the best way to his music.

Joe Blum

---

**LEONARD COHEN’S HAUNTING SONGS WERE FAMOUS BLUE RAINCOAT.**

**VANDERSTEEN AUDIO**

Vandersteen Audio was founded in 1977 with the commitment to offer always the finest in music reproduction for the dollar. Toward this goal there will always be a high degree of pride, love, and personal satisfaction involved in each piece before it leaves our facilities. Your Vandersteen dealer shares in this commitment, and has been carefully selected for his ability to deal with the complex task of assembling a musically satisfying system. Although sometimes hard to find, he is well worth seeking out.

Write or call for a brochure and the name of your nearest dealer.

VANDERSTEEN AUDIO

116 WEST FOURTH STREET
HANFORD, CALIFORNIA 93230 USA
(209) 582-3234
Many manufacturers who advertise in HIGHFIDELITY offer additional literature on their products free of charge to our readers. For more information on specific products advertised in this issue, drop a postcard, care of Dept. HF-587 unless otherwise noted, to the addresses listed below. If an address does not appear, literature is available through the company’s dealers only.

Advertising Index

Alpine 39
Blaupunkt 6, 7
Carver Corp. 44, 45
Cerwin Vega 19
Clarion 17
DAK 28, 29, 40, 41
DBX 5
Denon America Inc. 10
Discwasher, Inc. 31
Focus 75
Fujitsu Ten  

Cover III, 68, 69
J & R Music 49
Jensen  

Mitsubishi 32, 33
Pioneer Electronics USA, Inc.  

Cover II, 1
Polk Audio 26, 27, 74
Polygram Records Inc. 67
Radio Shack 2
Shure Brothers, Inc. 12
Sony Corp. of America  

Cover IV, 8, 9, 11
Vandersteen 79
Wisconsin Discount 73
Yamaha 15

Advertising Offices

GET THE HIGH END. ON THE FLIP SIDE.
INTRODUCING THE FUJITSU TEN DUAL AZIMUTH.

Auto-Reverse never sounded better. Only a re-calibrated tape head permits perfect sound reproduction in Forward and Reverse. Fujitsu Ten's unique Dual Azimuth System automatically adjusts the tape head, realigning it with the tape. The result: an enhanced Dolby and the full range of frequency response in both directions.

FROM $250......TO $2000

The Dual Azimuth Adjusting System introduced in Fujitsu Ten's incredible $2000 Compo is now available in the new "M" Series. Features of the M3 auto-reverse cassette receiver include electronic tuning, pre-set scan, Ultra Tuner (for superior FM reception), Dolby NR, automatic tape program search, high power (56 Watts total output), 4 channels amplified, soft green fully illuminated controls and, of course, the expensive Dual Azimuth System. Like all Fujitsu Ten car audio products, the "M" Series offers you high-end performance at a reasonable price: $250-$350.

FUJITSU TEN
CAR AUDIO
51 MILLION UNITS...34 YEARS EXPERIENCE

Write: Fujitsu Ten, 19281 Pacific Gateway Drive, Dept. 321, Torrance, California 90502.

An open-and-shut case for great music.

Don’t let its unassuming dimensions fool you. True, the new Sony Discman® D-10 is the smallest and lightest CD player you can find. But surprisingly, it comes packed with features you’d expect to find only in full-sized models. In fact, with 21-track selection programmability, 4 repeat modes and optional remote control, the D-10 performs splendidly as the centerpiece of your home stereo system.

But when you’re as portable as a Discman, it’s tough to stay put for long. Which is why it comes with a rechargeable battery for up to 4½ hours of digital music on the go. There are even optional accessories that can make Discman an integral part of your car stereo system.

Whether you choose the D-10 or any new Sony Discman, one thing is certain. You get the most advanced CD player technology available today. For at Sony, we not only created the world of Compact Disc, we keep making it bigger and better. Even when we make it smaller.

Never has a compact disc player with so much going for it kept such a low profile.