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SEPTEMBER 1987

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On the cover: From the top, Pioneer's CD-V player, the CLD-1010; NEC's AVR-700 surround-sound audio-video receiver; and Marantz's DT-94 DAT deck.



Cover design: Joanne Goodfellow
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CES Picks and Pans, Part 1



BY
**MICHAEL
RIGGS**

Because there are so many people trying to go to so many of the same places at the same time, the folks who run the Consumer Electronics Shows provide a free shuttle-bus service that runs from the convention center to other exhibition sites and the major hotels and back. (For complete coverage of the new products introduced at the Summer CES, see "Pieces of '88," page 40.) It's handy—especially when there aren't enough cabs to go around—and the price is right. It's also yet another place to meet people, including some you might not encounter in your normal rounds.

I find talking to retailers particularly interesting because their perspective on the audio-video universe is so different from my own. We spend a lot of time talking to manufacturers about their latest products and technical accomplishments, which is good as far as it goes. But it leaves us with, at best, a secondhand view of what's happening at the grass-roots level—the stores where people are deciding which products are worth their money and which aren't. Commerce is at least as important as technology in shaping the future of audio and video.

On one of my bus rides at the most recent show, I found myself drawn to a conversation taking place directly behind me between two retailers. After the ritual lamentation of how hard it is to make money selling video equipment when everyone discounts to within a gnat's eyelash of cost, they launched into an animated discussion of the prospects of Super VHS, which was probably the hottest innovation actually on sale at the show. Both liked the new format, but only one held out any hope for its survival.

The dissenter ran a video store in New Hampshire, where he sold equipment as an adjunct to his tape-rental business. He argued that the market is now predominantly software-driven: People buy VCRs mainly so that they can rent movies for viewing at home. The equipment they buy is determined primarily by the format of the pre-

recorded tapes available to them. Because VHS has pulled so far ahead of Beta and been so successful at staving off 8mm, VHS videotapes are all that many stores carry. That, in turn, reinforces the format's dominance by encouraging people to buy VHS recorders. The skeptical dealer noted that in the five years he's been in business, only a handful of customers have asked him about alternatives to VHS.

Hence his attitude toward S-VHS. Tapes recorded in the improved format cannot be played back on conventional VHS decks, which are what most people have. Consequently, merchants will not stock prerecorded S-VHS tapes and no one will have any incentive to buy machines to play them. Under this scenario, VHS is so entrenched that it cannot be dislodged, even by its creators.

Although I agree with most of the premises set forth by this skeptical dealer, I do not think they lead inevitably to so bleak a conclusion. What saves the new format is the ability of S-VHS VCRs to play back conventional VHS tapes (and to record in the old format when necessary). Buying an S-VHS deck does not lock you out of the library of tapes available from your local rental shop. It won't make them look any better than they would on an old-style machine, but they won't look any worse, either. And if you have a good monitor and do any taping off the air, you will be thrilled with the improvement in reproduction S-VHS can afford. It's still not quite broadcast or Laserdisc quality, but it's noticeably better than you can get with any other currently available consumer videotape format.

In short, if you're going to buy a high-end VCR anyway, why *not* buy S-VHS? With any luck, enough people will think that way that, in time, stores *will* have an incentive to stock prerecorded S-VHS tapes. S-VHS looks like a winner to me.

Next month, some thoughts on that other new format, CD-V. ■

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COPY CODE CONDEMNED

"INTERRUPTED MELODY" [JULY] STRUCK A very responsive chord. It seems some record companies have more than a little in common with other U.S. industries—seeking legislative protection of inefficient and outmoded ways of doing business and government enforcement of higher profit margins while charging the American consumer ever more for an inferior product. Although my system is relatively modest by today's standards, I do have several signal processors, which I am reluctant to use because each imparts its own subtle distortions to the music, even when used sparingly. Certainly any surgery of the magnitude described in your article would cause far greater damage, not to mention the problems of recorder unreliability introduced by the Copy Code scanners.

The people pushing for this system are more than dangerous: They are a menace to the very industry they seek to protect. I, for one, simply would not buy any recordings mangled by a Copy Code chip. Those trying to sell them to us may find themselves in the position of the doctor announcing that the operation was a success but unfortunately the patient died.

Robert Meals
Redlands, Calif.

ACCORDING TO YOUR ARTICLE ON THE COPY Code system ["Interrupted Melody," July], the CBS scanner chip sends no signal to the tape deck's "on/off switch" unless it detects a notch in the incoming audio. If this is true, the easiest way to bypass the anticopy device would be to disconnect the switch input from the chip output and connect it instead to ground, forcing the switch to stay on. This makes far more sense than trying to fool the chip into thinking no notch is present. If the comparator output is designed to deliver a DC offset, you can get the deck to generate the necessary offset by tapping off a DC voltage from the power supply and adjusting it with a couple of resistors.

This technique seems so obvious, however, that I would think the CBS chip must contain something to foil its implementation. On the other hand, I can envision a deck manufacturer purposely making it easy to disconnect the chip (with a jumper wire that can be cut) so that it can sell more recorders.

Ford E. Anderson
Vestal, N.Y.

I AM VERY CONCERNED ABOUT THE POTENTIAL consequences of CBS's Copy Code system to prevent home taping. In effect, the record and motion-picture industries are assuming that we are guilty of theft before the fact and that they therefore are entitled to dictate

what we can and can't record for our personal use. This smacks of authoritarianism, and if sanctioned, will very likely precipitate a consumer backlash that will carry the issue to the courts—an outcome that is in no one's best interest.

The record and motion-picture industries should take a tip from the computer industry, where almost all software publishers have dropped copy-protection after getting vociferous complaints from legitimate users. As a spokesman for the WordPerfect Corporation (a major producer of computer software) once said: "Dishonest is dishonest, and copy-protection schemes just make life hard for the honest user; besides, real pirates will find a way to break copy-protection schemes."

Raymond Chuang
Mountain View, Calif.

I HAVE A RECORD COLLECTION CONSISTING OF several thousand LPs, several hundred pre-recorded cassettes, and nearly 500 Compact Discs. I am clearly a major consumer of the recording industry's output. I also engage in home taping, primarily for the purpose of arranging selections for playback on my Walkman. I do not borrow other people's records to tape for my use. I have on rare occasions made tape copies for friends of recordings in my collection, almost always of LPs that have gone out of print.

If Copy Code legislation is enacted, I will avoid buying recordings that I know are encoded. To this end, I think it is important that, as a matter of consumer protection, any legislation on this issue include a requirement that manufacturers clearly state on the outer packaging of encoded recordings that they have been subjected to this mutilation.

Arthur S. Leonard
Associate Professor of Law
New York Law School
New York, N.Y.

I THANK YOU FOR YOUR CLEAR WARNING to the audio-enthusiast public about the proposed restrictions on our ability to tape music in our homes. I have finally been stirred off my rear and have written to Congressman Rhodes and Senators McCain and DeConcini. (Given your editorial lead time, I hope I am not too late.) My letters included a proposal you may want to push for. I suggested that my representatives introduce legislation requiring that any recording encoded with the CBS copy-protection system and offered for sale carry the following consumer-protection label: "Warning: The fidelity of this recording has been intentionally degraded to prevent you from copying it at home." Keep the pressure on.

Stephen D. Leonard
Mesa, Ariz.

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THROUGH MY CORRESPONDENCE WITH EMI, Arista, Capitol, London, Philips, and Polygram, I have learned that not only will they not label Copy Coded recordings as such, but neither will they make this information available to consumers in any other manner. I have written to my Congressmen, and I won't buy any Copy Coded records. But I am only one person. Widespread public awareness and opposition is our best hope of defeating this legislation. It would help if HIGH FIDELITY were to publish a list of which record companies will be Copy Coding their releases.

Robert Rowton
Albuquerque, N.M.

YOUR PIECE ON COPY CODING ["Interrupted Melody," July] is excellent. You could do your readers a valuable service by advising us of what companies will be using the Copy Code process, so that we can make informed decisions about which CDs to buy.

Jaime H. Macinnis
Mt. Horn, Ariz.

We will try to do this.—Ed.

FOUND: SNARE-DRUM FANS

THANKS SO MUCH TO KEN RICHARDSON for his intelligent article "Wanted: Snare Drums" ["Medley," June]. I have long been a fan of such percussionists as Steve Gadd, Billy Cobham, Phil Collins, Chester Thompson, and the late Buddy Rich. Without their talent, the music of their albums and concerts would not be the same. These drummers, with the underlying time signatures they play, carry the mood of each song, unlike the electronic 4/4 we are quickly tiring of.

Sure, if I want to dance, it's nice to have an even beat. But if I want to listen to *music*, I want to hear *musicians*, with heart and soul. Computerized drums cannot provide human emotion.

Whitney J. Densmore
Kitchener, Ontario, Canada

THANKS—AND A TIP OF THE HI-HAT—TO KEN Richardson for his article "Wanted: Snare Drums." I miss them, too.

Robert Rowton
Albuquerque, N.M.

À LA RECHERCHE DU TEMPS PERDU

THE ARTICLE BY R. D. DARRELL ON RECENT cassette reissues of historic classical recordings ["Through the Hourglass," February] was very informative. Of particular interest to me were the comments on Madeleine Grey. Though Mr. Darrell never encountered them, her accounts of Ravel's *Chanson hébraïque*, *Deux mélodies hébraïques* and *Chansons madécasses* and Canteloube's *Chants d'Au-*

vergne were indeed issued on LP. I have a copy of the disc (COLC 152), which was part of Angel's "Great Recordings of the Century" series.

I have long been fascinated by Grey's voice and have played her records for a visitor from the Auvergne who later sent me a record of local people singing these songs. There is no doubt of the connection, but no comparison between the performances!

Elizabeth Slaney
Greensburg, Pa.

IN REVIEWING A RECORDING OF GEORGE Szell's orchestration of Smetana's Quartet No. 1 in E minor ["CD Spread," November 1986], Robert E. Benson mentioned an earlier Szell recording of the work. I believe the first appearance of this orchestration on LP was MI 2095, one of Columbia's 10-inch recordings in their Masterworks Series, and that the Epic LP to which Mr. Benson refers came later. I would be happy to supply a cassette made from this release so that you may determine if any later releases are reissues of this particular performance, which I believe Szell recorded in 1949.

In the February issue, R. D. Darrell discussed Conductart/In Sync C 4143, which contains reissues of Madeleine Grey's extraordinary performances of works by Ravel and Canteloube. This entire program has previously appeared on LP, courtesy of EMI's World Records label (Retrospective Series), under the number SM 196.

In the same issue, Bill Zakariasen reviewed VCD 47226, which features works drawn from film scores by Miklos Rozsa. I have not heard this recording, so I must assume that Mr. Zakariasen is correct in attributing the eerie sounds in the *Spellbound* Concerto to the Ondes Martenot. This must represent a major change in Rozsa's thinking, since in the film and on the first recording he made of the work for Capitol Records (first released on a 10-inch LP, later reissued as T456 in the 12-inch format), the composer calls for the theremin. The substitution of an Ondes Martenot for a theremin could have been done for practical reasons: Theremin players are a nearly extinct breed, while, so far as I know, the Paris Conservatoire still offers degrees and certificates for those majoring in performance on the Ondes Martenot.

Incidentally, the above "corrections" are not at all intended as cavils. Your magazine has an excellent and conscientious staff of reviewers.

Leroy W. Southers, Jr.
Sunland, Calif.

Our thanks to both of you on behalf of all those readers interested in tracking down Madeleine Grey's immutable interpretations on LP.—Ed.

VIVA LE DISCHI LPI!

FOR SEVERAL YEARS, I HAVE BEEN AN AVID AND passionate reader of HIGH FIDELITY. I agree with you that the Compact Disc is the star of the present musical era. However, your disaffection with the LP is not justified. This neglected medium is still vital: Fresh and musically brilliant recordings continue to appear which excite the musical consumer. This is mostly due to the availability on LP of prominent and extraordinary artists such as Vladimir Horowitz, Leonard Bernstein, Claudio Abbado, Lorin Maazel, Riccardo Muti, and Claudio Arrau, to name just a few.

If LP maintains a high standard (of artists, sound quality, etc.), it will not fade in the long run.

Arnaldo Cantani, M.D.
Rome, Italy

These same artists you mention are also readily available on Compact Discs, which have the added advantage—not always exploited by the record labels—of longer playing time. It is true that, given the best efforts on the part of the manufacturer and the collector, the LP is still vital. Nonetheless, the reissuing of existing recordings by these and other artists in the CD format, which is now in progress (though proceeding more slowly than one might wish), assures that the collector will also be well served by the new medium.—Ed.

WE'VE AWAKENED A SLEEPING BEAUTY

IN YOUR RESPONSE TO GEORGE C. ONGEMACH'S letter [March], you recommended Antal Dorati's complete Tchaikovsky *Sleeping Beauty* ballet recorded with the Concertgebouw Orchestra. At the same time, you regretted its deletion from the catalog.

However, I purchased this complete *Sleeping Beauty* on three cassettes last year from the Musical Heritage Society. They may be able to help.

Barton King
Citrus Heights, Calif.

Musical Heritage Society informs us that the recording is still in their catalog and that it is available on three LPs (MHIS 837236M) or three cassettes (MHIS 239236L). The address is: Musical Heritage Society, 1710 Highway 35, Ocean, N.J. 07712.—Ed.

SITTING IN THE RUMBLE SEAT

SINCERE THANKS TO THE MUSES FOR CARNEGIE Hall's \$50 million renovation [April]. All our national treasures should get such loving care. Now, if we could only close down that subway . . .

Dan Pope
Boston, Mass.

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Stereo Review Magazine

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Polk's Revolutionary True Stereo SDA Breakthrough

The magnificent sounding new SDA 2A incorporates Polk's revolutionary True Stereo SDA technology. This patented, critically acclaimed, Audio Video Grand Prix Award winning breakthrough is the most important fundamental advance in loudspeaker technology since stereo itself. In fact, the design principles embodied in the SDAs make them the world's first and only True Stereo speakers.

Why do Polk SDAs always sound better than conventional speakers? When conventional loudspeakers are used to reproduce stereo both speakers are heard by both ears causing a form of acoustic distortion called interaural crosstalk which cuts down stereo separation, obscures detail and interferes with the proper reproduction and perception of imaging, and spaciousness. Polk SDAs are designed to eliminate interaural crosstalk so that each speaker is only heard by the one correct ear (i.e. left channel/left ear, right channel/right ear), like headphones. The result is dramatically improved stereo separation, detail and three-dimensional imaging. In order to accomplish this each SDA incorporates a separate set of drivers which radiates a special dimensional (difference) signal which cancels the undesirable interaural crosstalk coming from the wrong speaker to the wrong ear. High Fidelity called the results "Mind Boggling".

The Most Extraordinary Value in High End Audio Today

The new SDA 2As, like all the current SDAs, incorporate the latest 3rd generation SDA technology developed for Matthew Polk's Signature Edition SRS and SRS-2 including **1**: full complement sub-bass drive for deeper, fuller, tighter and more dynamic bass response; **2**: phase coherent time-compensated driver alignment for better focus, lower-coloration smoother, clearer, more coherent midrange and improved front-to-back depth and; **3**: bandwidth-optimized dimensional signal for smoother high-end and even better soundstage and image. The new SDA 2A is the finest sounding and most technologically advanced speaker ever produced at its extraordinarily modest price. It sounds dramatically better than speakers from other manufacturers that cost 4 times as much and more and is, at \$549 ea., truly the speaker of your dreams at a price you can afford.

"Breathtaking...a new world of hi fi listening."

Stereo Buyers Guide

The spectacular sonic benefits of SDA technology are dramatic and easily heard by virtually anyone. Reviewers, critical listeners and novices alike are overwhelmed by the magnitude of the sonic improvement achieved by Polk's SDA technology. Stereo Review said, "These speakers *always* sounded different from conventional speakers — and, in our view, better — as a result of their SDA design."

All Polk's SDAs, including the new 2As produce a huge lifelike three dimensional sonic image which will amaze you. You will hear for the first time instruments, ambience and subtle musical nuances which are present on your recordings but masked by the interaural crosstalk distortion produced by conventional speakers. Stereo Review said, "Spectacular...literally a new dimension in the sound...the result is

always better than would be achieved by conventional speakers". High Fidelity said, "Mind Boggling...Astounding... Flabbergasting...we have yet to hear any stereo program that doesn't benefit". With SDAs every instrument, vocalist

"Mindboggling, Astounding, Flabbergasting"

High Fidelity Magazine

and sound becomes distinct, tangible and alive; allowing you to experience the spine tingling excitement, majesty and pleasure of live music in your own home.

Other Superb Sounding Polks From \$85. to \$1495. each

No matter what your budget is there is a superb sounding Polk speaker perfect for you. Polk's incredible sounding/affordably priced Monitor Series loudspeakers utilize the same basic components as the SDAs and begin as low as \$85. each. The breathtaking sonic benefits of Matthew Polk's revolutionary True Stereo SDA technology are available in 5 SDA models priced from \$395. to \$1495 ea.

"You owe it to yourself to audition them"

High Fidelity

The experts agree: Polk speakers sound better. Use the reader's service card or write to us for more information. Better yet, visit your nearest Polk dealer today. Your ears will thank you.

polkaudio
The Speaker Specialists®

5601 Metro Drive, Baltimore, Md. 21215



OVERPROCESSED SIGNALS

I AM APPALLED BY THE PROLIFERATION OF SIGNAL processors in the audio marketplace, all of which are said to "enhance" the original signal. Whatever happened to the notion that a superior high fidelity system is simply a "straight wire with gain"?

Pat Randolph
Buffalo, N.Y.

The idea is alive and well, albeit beset by philosophical confusion. While the concept has validity for, say, power amplifiers, it really can't be applied to the entire recording-reproduction chain. Straight-wire-with-gain audiophiles appear to operate on the unstated assumption that whatever signal comes out of a disc player or tape machine somehow perfectly embodies an original performance. This notion is based on what is, at best, a very unclear notion as to how sound is actually recorded and reproduced.

Assuming that you had a perfect recording of the sound field from a specific location at a live musical event, and assuming all the electromechanical and electronic elements in your playback system were perfect, your speakers would still have the task of replicating the acoustics of the original concert hall within the comparatively cramped space of a conventional listening room, with its own set of reflections and reverberations. In short, chances of *exactly* duplicating an original live sound field in your listening room are about zero.

Furthermore, given the aberrations in frequency response, noise level, and dynamic range likely to be introduced—deliberately or otherwise—at every stage in the recording/playback process, and the loss of rear ambience and reflections in a conventional two-speaker home system, I see nothing wrong with using the appropriate signal processors to correct, minimize, ameliorate, or even eliminate sonic shortcomings. As you might guess, I've long since given up any hope of reproducing the precise sound of any original musical performance in my home. But when I achieve plausible reproduction—meaning that I hear the music as it might be heard live in some adequate acoustic environment—then I'm satisfied that I've achieved *high*, if not *absolute*, fidelity.

WEAKEST LINK

I'M THINKING ABOUT UPGRADING MY SYSTEM BUT AM unsure how to go about it. Is there any way, without test equipment, to determine which components are the "weakest links" in my system?

Tim Whetely
Brooklyn, N.Y.

You certainly don't need test equipment to discover which (if any) of your components are the weak links. All you need to do is determine which components are responsible for whatever inadequacies you hear. For example, if you know that your speakers can't play loud enough without rattling or blowing out their drivers, or if your amplifier overheats and distorts while trying to supply all the power that your speakers need, or if your tape deck won't make a clean noise-free copy of a disc, or if your record player distorts on loud passages, then you can pinpoint the standard system problems

to eliminate by upgrading.

The best way I know of to determine whether a component is up to the demands you put on it is to temporarily substitute another component known (or reputed) to have better performance. If your sound improves or some problem is eliminated, then you have discovered an area ripe for upgrading. However, be careful not to mistake small differences in frequency response or greater loudness at a given volume-control setting as an indication of better performance.

SLAM DAMAGE

I'VE NOTICED THAT WHEN I CLOSE THE TRUNK LID OF MY car, the cones of the woofers installed in the rear deck seem to jump forward. Can the woofers be damaged by my slamming the trunk shut?

Dexter Burroughs
Chicago, Ill.

Possibly, but not likely. The variables in the situation are the ruggedness of the woofer-cone suspensions, the trunk's size and the amount of air leakage, and the friction in the trunk lid support (which would influence the violence of the slam). To determine whether there is a potential problem, watch the woofer cone during a normal slam. If the forced outward excursion exceeds a quarter inch or so, it might be best to close your trunk a bit more gently in the future. However, I expect that the better manufacturers of large car-stereo speakers, knowing where they would be mounted, have designed their cone suspensions to withstand large pneumatic shocks.

AMP POWER INCREASE

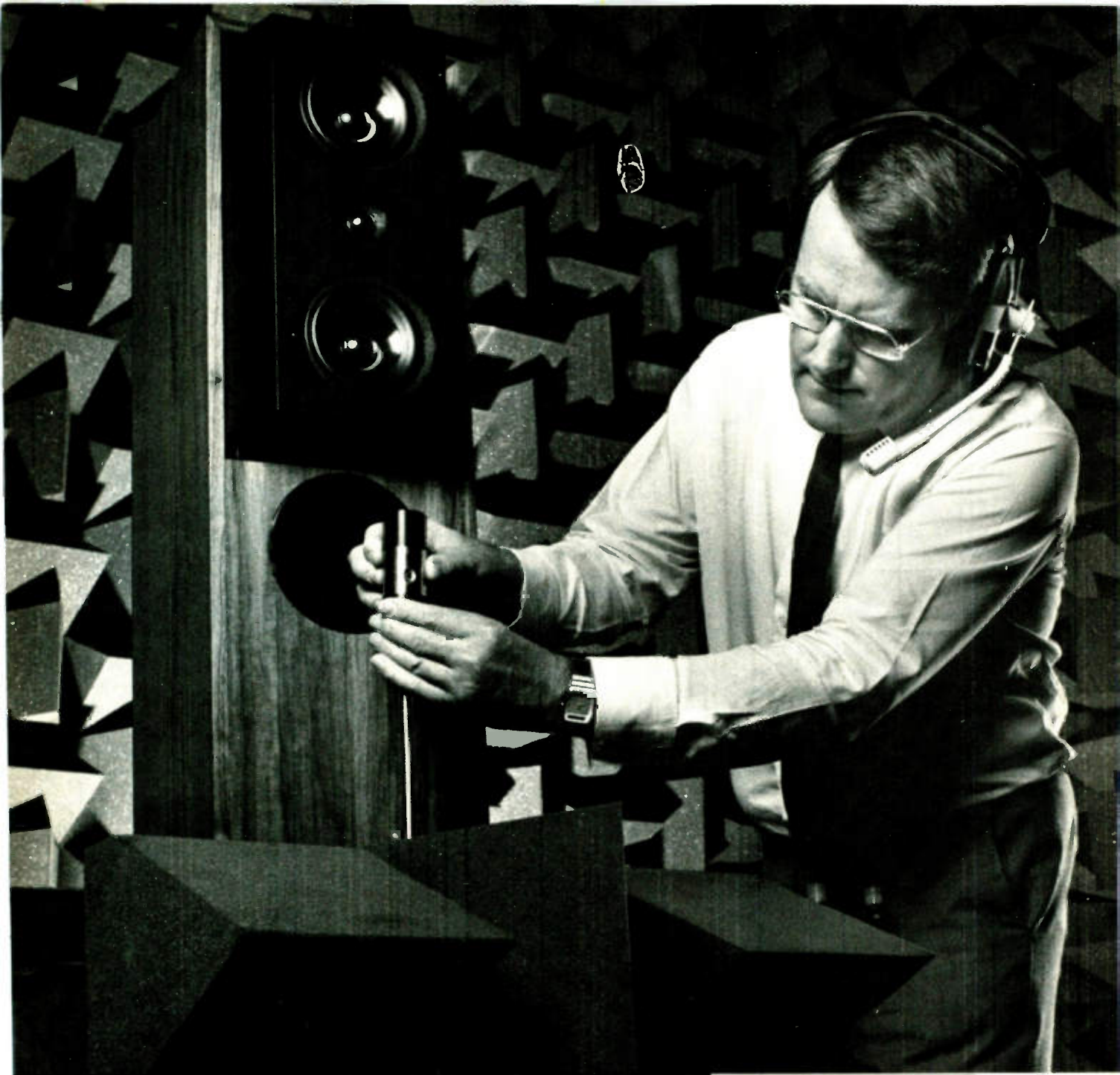
THE SPEC SHEET FOR MY 100-WATT-PER-CHANNEL amplifier states that it puts out 150 watts into 4-ohm speaker loads. A buddy who works in electronics told me that if I were to connect an 8-ohm resistor across the terminals of my 8-ohm speakers, my amplifier would see a total resistance of 4 ohms and put out more power. Is he right?

Fred Greene
Norton AFB, Calif.

Only half right. First of all, if you did achieve a 50 percent increase in amplifier power (from 100 to 150 watts, or 20 to 21.76 dBW), it would provide a hardly worthwhile and barely perceptible increase in maximum potential volume of less than 2 dB (1.76 dB, to be precise). But even that would not reach your speakers, since the power from each channel of your amplifier would be divided between the 8-ohm speakers and the 8-ohm resistors. The net result at most frequencies (depending upon the speakers' impedance curves) would be that 50 percent of the 150 watts (75 watts, 18.75 dBW) would go to your speakers and the other 50 percent would simply heat up the 8-ohm resistors. In short, the net result of adding the resistors would be *less* power delivered to your speakers.

We regret that the volume of reader mail is too great for us to answer all questions individually.

B Y
L A R R Y
K L E I N



**'Before we could make our speakers better,
we had to invent a better speaker test.'**

— Laurie Fricham, DIRECTOR OF KEF RESEARCH AND DEVELOPMENT

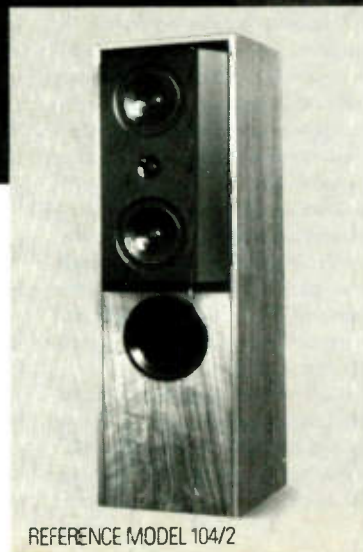
ONE STEP IN THE MAKING OF A KEF

A speaker is usually measured by frequency response sweeps. But their proper interpretation is difficult at best — misleading at worst.

'So in 1971, KEF joined forces with Hewlett Packard and Bradford University to develop a more reliable test: computerised Fast Fourier Transform (FFT). Our computer

analyzes a series of pulse tones to produce a far more accurate, more detailed picture of frequency, phase, and transient time-domain behaviour.

'FFT testing has already spurred us to major advances in phase integrity and production consistency. It's certainly easier to make progress when you can see where you're going.'



REFERENCE MODEL 104/2

KEF
*The Speaker
Engineers*

Taping At Retail



EDITED
BY
CHRISTOPHER
JESSE

WHAT IF YOU COULD WALK INTO A RECORD store, pick about ten of your favorite songs (at 50 cents to \$1.50 apiece), and walk out with a ready-made tape of those songs? That's the concept behind the Personics System, planned for an early-1988 national rollout. The idea, originally conceived back in late 1983, is thought by the company to solve two problems: the purported loss of revenue to record companies from home taping and "the time and trouble of taping from *borrowed* recordings and [from] radio stations" [italics added].

The Personics System stores as many as 15,000 music selections in digital form on optical disks. The high-speed storage and retrieval process is centered around a version of Dolby's Adaptive Delta Modulation (ADM) system, licensed exclusively to Personics as "Dolby Digital." According to the company, the ADM technology has been refined for use in a high fidelity, optical-disk-based application. Although performance specifications are not yet available, company founder Charles Garvin says that the quality of a Personics System high-speed dub is limited only by the constraints of the cassette medium. Recordings are made on high-bias tapes, with Dolby B noise reduction.

A customer can receive a finished cassette, complete with a labeled insert, in about ten minutes. The system automatically tallies the royalties to be disbursed to the individual record companies and incorporates safeguards to prevent unauthorized access to the master disks. The participating record companies control the contents of the song library to avoid conflicts with concurrent commercial releases. For example, new albums will have just one song available at a given time, presumably to tie in with the marketing plans of the record company and also to prevent customers from "cherry picking" the hits from an album.

Personics—as well as most record companies—sees home taping as illegitimate competition for prerecorded music. The only excuses for home taping, says the company, are the ability to make personalized

compilations and the generally poor quality of prerecorded cassettes as compared with self-made dubs. The Personics System seems to be a means to an end, that being the abolishment of home taping through legislative action. Naturally, the system has moral support from the Recording Industry Association of America (the RIAA, which represents most major American record companies), as well as financial backing from Thorn EMI, the multi-billion-dollar British entertainment conglomerate.

In positive terms, the Personics System would give consumers access to some songs from albums they might never have bought. And its "Listening Post" feature, which lets customers sample 20 seconds from a selection, could be used by the record companies to spotlight new artists. That's fine, as it benefits all parties. But given the escalating war between the RIAA and advocates of the consumer's right to make tapes for personal use, it would appear that the Personics alternative—if it generates enough support in the marketplace—could score points for the RIAA in its crusade to recapture the revenue it claims is lost to home taping. But as reported in the July "Currents," the hard economic facts are that the record industry is presently enjoying a sharp increase in profits, a fact that stands in marked contrast to its alleged hardship.

The best thing about the Personics System is that it enables you to do what you can already do at home. The next best thing is that, at least for now, you can *still* do it at home.

C.J.E.

CAMCORDER NEWS

PANASONIC'S PV-100 VHS-C CAMCORDER— with a special fast shutter speed for taking sports action shots in bright light—was an interesting novelty at the last CES but seems to have started a full-blown trend. Panasonic has a full-size VHS model, the PV-320, that combines the $\frac{1}{1000}$ -second shutter speed with a new CCD (solid-state) pickup said to record at less than 5 lux. It also includes fly-



JVC GR-C11 VHS-C CAMCORDER

ing erase heads for clean insert editing.

JVC has added the 2.6-pound GR-C11 VHS-C camcorder (\$1,149), similar to its simple-to-use GR-C9 but featuring autofocus and a 3:1 power-zoom lens.

Also at the small end of the scale is the Olympus VX-802 8mm camcorder (price not yet announced), weighing 2.6 pounds and featuring full record/play operation plus optional $\frac{1}{500}$ - and $\frac{1}{1000}$ -second shutter speeds, autofocus with a lock setting, and a $\frac{1}{2}$ -inch CCD imager that works down to 7 lux. Sony's 8mm entry, the CCD-V9 Handycam Pro (\$1,650), has a new 380,000-pixel $\frac{2}{3}$ -inch CCD pickup rated to 5 lux, five shutter speeds (the standard $\frac{1}{60}$ - plus $\frac{1}{100}$, $\frac{1}{500}$, $\frac{1}{1000}$, and $\frac{1}{2000}$ -second), noiseless slow-motion playback, through-the-lens autofocus, a 6:1 power-zoom lens, automatic date/time display, and a weight of about 2.9 pounds with tape and battery.

E. Brad Meyer

8mm NEWS

FACED WITH STIFF COMPETITION FROM S-VHS in the camcorder market, and not yet supported with much prerecorded software, 8mm video is still struggling to take off. Sony intends to apply what it learned from the Walkman to 8mm video through a trio of very small components called the Personal Video Series. The smallest of these is the EV-FP1, a battery-operated 8mm VCR with a built-in 2.7-inch color LCD TV, all about the size of a large paperback book. (A publicity photo shows a businessman watching a



SONY EV-S1 8mm VCR

tape while waiting for a train.) The EV-FP1's recorder has a one-day/one-event timer, still frame, and picture search.

Slightly larger is the EV-DT1, a desktop combination 5-inch Trinitron color TV and 8mm VCR. The third unit, the \$900 EV-S1, is the only one for which firm import plans have been made. It's a tabletop VCR that has PCM digital sound, a wireless remote control, a built-in surround decoder, and a flying erase head for crisp transitions and insert editing. It's about the size of a college dictionary and weighs less than six pounds.

E.B.M.

MAKING ADJUSTMENTS

THE PERFECT PICTURE SYSTEM USES A VIDEO-cassette that contains a series of standard reference signals for setting the picture controls on your TV set and evaluating the audio performance of your video system. The signals include a gray scale for setting brightness and contrast; red, blue, and green "flat-field tests" that show whether your set reproduces color evenly across and to the edges of the screen; a crosshatch pattern to check convergence of the electron beams; rapid bursts of white to check blooming (or how well your set recovers from sudden and large changes in the picture signal); a 1,000-Hz mono audio tone, which reveals the wow and flutter in a VCR's linear soundtracks and the degree of distortion through the audio path of your system; a 0-dB stereo audio tone, 1,000 Hz on one side and 400 Hz on the other, that is useful for gauging channel balance and linearity; a sweep tone from 20 Hz to 20 kHz, recorded on both the tape's linear and Hi-Fi tracks, with a running display of frequency; and a segment of "real world" scenes with a full range of grays and flesh tones so you can see the results of your picture adjustments.

The procedures for the gray-scale and color-bar tests are narrated, and the user's manual also explains what to look for in each test. Long and short versions of the setup routine are included, with only the "quick check" section including the flat-field test.

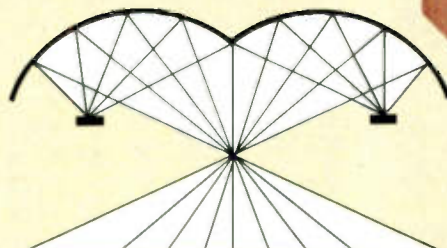
I tried Perfect Picture on a basic VCR

connected to a slightly long-in-the-tooth TV set. It confirmed what I suspected: Red looked too pink, green had a blue cast, and each could be made better only at the expense of the other. (See "True Colors" in our March issue for a rundown of the colors we *don't* get on today's sets.) In addition, the set's convergence was off. While the resulting picture was about as I would have adjusted it anyway, the process was instructive. (The color-bar test, however, was a bit frustrating: I had trouble completing it in the allotted time, necessitating a quick rewind.) The audio sweep tone clearly revealed the sonic limits of the mono VCR/TV speaker

arrangement being tested, which may provide an extra incentive for those thinking of upgrading to a Hi-Fi VCR. The user's manual suggests that Perfect Picture be used for evaluating equipment before purchase as well.

As the manual concedes, settings for one prerecorded tape or TV channel may not be completely appropriate for another, but that doesn't detract from the fun or the product's basic value. Perfect Picture is available by mail for \$31.45, including shipping and handling. Contact Sirius Communications Group, P.O. Box 503, La Honda, Calif. 94020. Tel. (415) 747-0715. C.J.E. ■

More than just a loudspeaker... a complete musical experience.



Many speakers offer a reasonable illusion of simple left-right stereo. And some can also provide well-balanced, full-range sound. But the new SL-100 loudspeaker system from Signet goes a significant step further. It reaches beyond the speakers' physical location to precisely recreate the spatial dimensions of the original recording.

This three-dimensional accuracy is achieved by a patented breakthrough in directivity control: the Ferrallipse Acoustic Lens.* A remarkable dual-ellipsoid sonic reflector, it was originally presented to the scientific community at the Audio Engineering Society Convention on October 14, 1985. A reprint of the AES paper is available on written request. The Signet SL-100 loudspeaker is its first commercial audio application.



SIGNET SL-100

The Ferrallipse Acoustic Lens combines and focuses the output of two precision 1" high frequency transducers to achieve truly uniform 120° dispersion coupled with uncommonly high power handling capacity.

Before you select a speaker system, visit your Signet dealer. Bring your most demanding analog or digital recordings, and your memories of how music *really* sounds. Then sit down, relax, and close your eyes. You'll be transported by a remarkably convincing sonic illusion. The new Definitive Image Loudspeaker, only from Signet.

*Ferrallipse® is a registered trademark of Phase Coherent Audio, Inc.

signet

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FIRST, WE HELPED PIONEER THE TECHNOLOGY. THEN WE
LEARNED FROM OUR SUCCESS. THE NEC 26" RECEIVER/MONITOR
CERTAIN THINGS IN LIFE SIMPLY CANNOT BE COMPROMISED.

NEC

DESKTOP DSP

AS I'VE SAID BEFORE IN THESE PAGES, THE FUTURE development of digital audio lies in the direction of digital signal processing (DSP). Specialized computers will be used to perform all the standard audio processing operations (equalization, reverberation, mixing, and the like) without the signal ever leaving the digital "domain" after the initial analog-to-digital conversion in the recording studio. With DSP, unusual operations such as noise removal and independent alteration of pitch and tempo will also become common. Recently, a fascinating product crossed my desk that clarified for me several important aspects of DSP I have not covered: its cost and inherent difficulty, physical and mental.

The product is the \$2,495 DSP-16 Data Acquisition Processor from Ariel Corp. (110 Greene St., Suite 404, New York, N.Y. 10012), an expansion board for IBM personal computers (and work-alike "clone" models) that plugs easily into a standard expansion slot located on the host computer's main circuit board. In brief, the DSP-16 will digitize (convert from analog to digital) two channels of analog audio signals to a resolution of 16 bits and at sampling rates between 1 and 50 kHz. It will also reconvert digital data into two analog channels for feeding to other audio components. Mediating these two functions is the heart of the DSP-16: 512 kilobytes of digital memory and a Texas Instruments TMS-32020 signal processing integrated circuit, which is now the single most expensive IC in my PC (the DSP-16 itself costs more than the rest of the computer). The Ariel board can, when suitably programmed, perform the classic DSP operations (filtering, reverb, etc.) on the digitized input signals and send the processed results to the output D/A converters.

Supplied with the DSP-16 are five programs meant to demonstrate its computing power and to serve as tutorial programming examples. They may also, for some users, entirely justify the cost. Two related programs—for data acquisition and for an on-screen digital storage oscilloscope—both enable you to store and view waveforms (the oscilloscope can continuously display the signal) on the computer monitor. The data acquisition program also enables recording the digitized signal on floppy disk for storage or "off line" processing; the oscilloscope's screen can be printed out (see illustration).

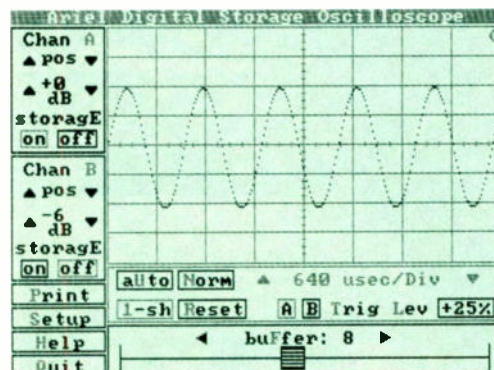
The other three programs are more specifically audio oriented. A digital-audio effects program creates two independently adjustable channels of delay with feedback for a simple ambience effect. This application fully exercises the DSP-16's high-speed real-time capabilities, since the program must recalculate the value of every sample and therefore must completely finish execution during every sample period. With a sampling rate of 50 kHz, that means every 20 *microseconds*. That it works at all is a tribute as much to the skill of the programmer in writing fast "code" as it is to the speed of the DSP chip.

An audio-loop editor allows the loading of 5.2

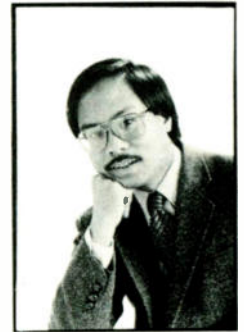
seconds of a single channel of audio (at a 50-kHz sampling rate) into the board's digital memory and also allows playback of any portion of the saved segment at varying output sampling rates (a "Doppler shift," the manual calls it). The last supplied piece of software is a very educational waveform synthesizer that enables the construction and audition of waveforms by addition and subtraction of harmonics. The program allows you to control the amplitude and phase of each harmonic.

As useful as these programs are, taking full advantage of the power of the DSP-16 requires the writing or customization of programs for it. Now the bad news: To do so, you must have command of at least one high-level computer language (Basic, Fortran, Pascal, or C), familiarity with the two very different architectures and assembly languages belonging to the IBM PC and the TMS-32020 DSP chip, fairly comprehensive knowledge of many of the principal problems of actually using DSP (number representation, round-off and truncation errors, processor speed limitations), and last, but certainly not least, a grasp of the mathematical basics of DSP (sampling, the Z transform, the Discrete Fourier Transform, and the rest). A piece of cake!

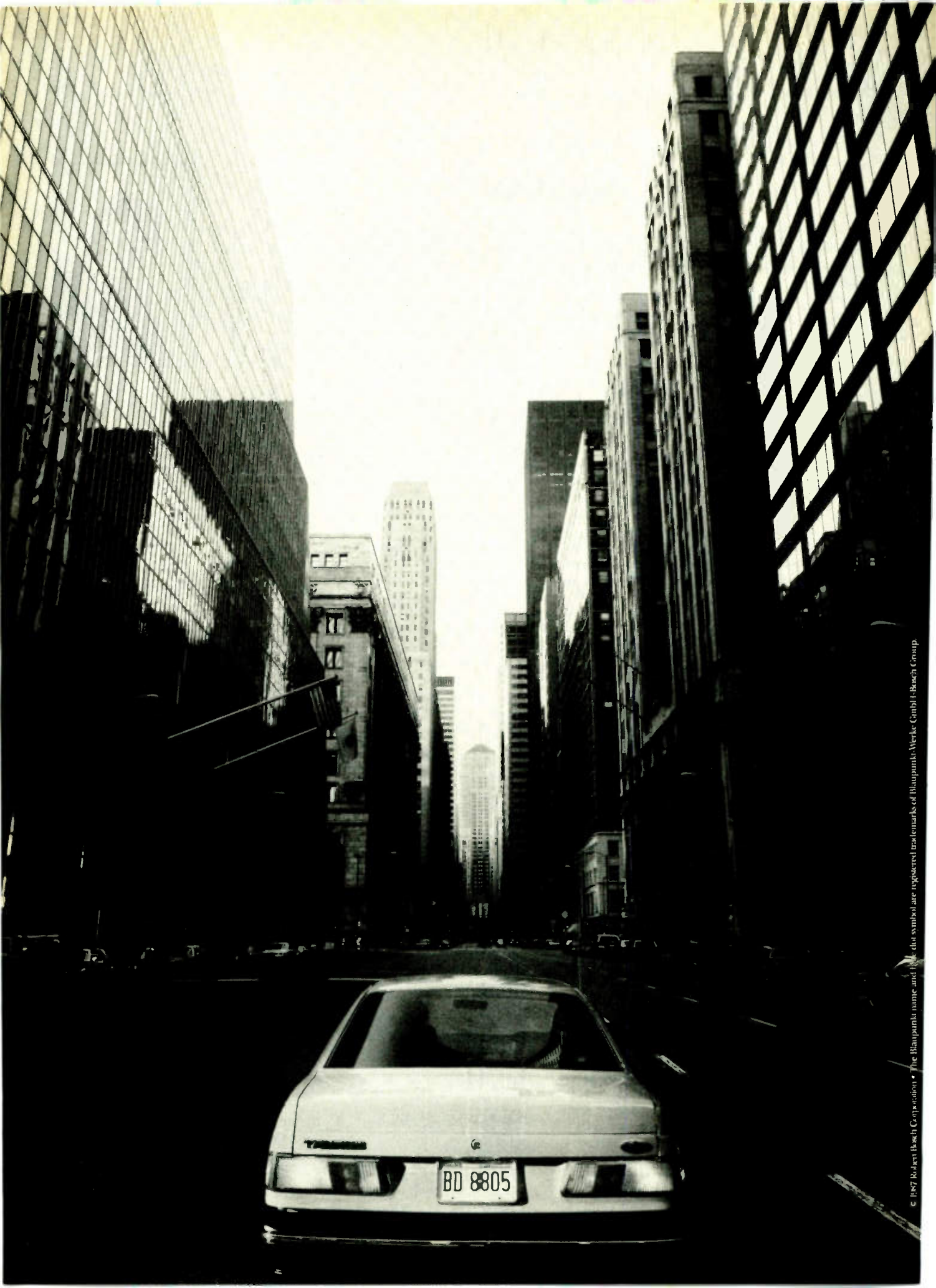
Why is all this necessary to get, say, a digital filter boosting the octave around 1 kHz by 3 dB, something that in the analog domain can be done simply by pushing up an equalizer slider? Because there exists no widespread high-level language (like Fortran or Basic) whose purpose is to perform DSP. This situation results from two factors: the newness of DSP chips like the TMS-32020 and the various chips' widely differing methods of operation. Both factors preclude the type of standardization necessary for the development of an easy-to-use DSP language. Perhaps in a few years, all that will be necessary will be a simple command—OCTAVEBOOST(1000,3), for example—that will automatically compile the necessary instructions for the DSP chip in use, regardless of its design or manufacturer or country of origin. Until then, the would-be DSP-16 programmer had better bone up on those Z transforms. ■



THE DIGITAL OSCILLOSCOPE PROGRAM FOR THE ARIEL DSP-16 DIGITAL SIGNAL-PROCESSING BOARD PRODUCES PRINTOUTS LIKE THIS ONE.



BY
DAVID
RANDA



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After the mountains of Europe, the canyons of North America pose no problem for a Blaupunkt.

For a Blaupunkt car stereo, the radio reception difficulties created by big city buildings are no big deal.

Because ever since the first



Blaupunkt was introduced in 1932, our tuners have had to overcome much bigger obstacles.

The Alps.

The Pyrenees.

The Apennines.

These European mountain ranges make even the towering headquarters of modern mega-corporations appear puny by contrast.

Yet thanks to the ingenuity of our 326 car audio engineers in Hildesheim, West Germany, Blaupunkt car stereos are superbly equipped to handle even the most extreme FM reception problems.

You see, a car stereo's ability to capture an FM radio signal is determined by five factors: FM sensitivity. Selectivity. Multi-path distortion. Signal attenuation. And RF intermodulation.

Most car stereo systems do a reasonably good job with two—perhaps three—of these factors.

But due to the persistence of our engineers—and the dozens of patents we've earned in this area alone—Blaupunkt's CODEM III and ORC II dynamic tuning systems do exceptionally well in all five areas.

Which helps explain why Blaupunkt has earned a reputation for engineering the world's finest tuners.

We even take the trouble to design our own antennas.

Something not one of our competitors bothers with.

So if you're an urban motorist frustrated by all those buildings wreaking havoc with the signals of all your favorite stations, pay a visit to your independent Blaupunkt car stereo specialist. (For the one nearest you, please call us at 1-800-237-7999.)

What you hear will be music to your ears.

Without all the static you've been accustomed to.

● BLAUPUNKT
Designed for people with ears.
And something between them.



B Y
R O B E R T
L O N G

WHICH SILENCE IS GOLDENER, PART 2

LAST MONTH, I WROTE OF THE PHILOSOPHIES BEHIND the Dolby and DBX noise reduction (NR) systems available in cassette gear. This month, we'll take a look at the way they operate in practice. I currently use all four options: no noise reduction, Dolby B, Dolby C, and DBX. Some folks won't use any NR, either because they don't value reproduced music enough to bother with good equipment or because of the cost involved (there still is bottom-dollar gear without Dolby B). More worrisome are those listeners at the other extreme who claim to hear untoward sonic effects from the application of any noise reduction system.

For most purposes, however, NR is a must. Without it, the cassette medium doesn't really qualify as high fidelity—its raw dynamic range can't be cajoled significantly beyond 60 dB in theory. In practice, only 50 dB of dynamic range is likely even when using a good deck and tape, and that's with astute level-setting. As I outlined last month, you can assign an approximate working dynamic range of between 80 and 90 dB to DBX, 70 dB to Dolby C, and 60 dB to Dolby B. The improvements afforded by NR are obvious, but that's by no means the whole story.

Though some claim to have heard replication errors specifically traceable to a Dolby B circuit, I never have. As long as the azimuth, bias, equalization, and the NR system itself were correctly adjusted on the recorder—and the playback deck also adjusted accordingly—any replication error can be traced to some other cause. But if these parameters aren't set properly, they can induce what might be called secondary errors; like Iago working on Othello, they misinform the noise reduction and cause it to commit errors through no fault of its own.

For example, say you've been getting superb (that is, accurate) Dolby B recordings for years. You switch to the latest supertape and record just as you usually do, carefully setting the deck's bias for the new tape. Even so, playback still sounds brighter than the original. What happened? Chances are that the new tape is a few dB more sensitive than the brand you've been using. Without an adjustment for this parameter (using a recording-calibration control on the recorder), any Dolby B playback circuit will interpret the higher recorded levels as meaning that less treble expansion (attenuation) should be supplied on playback, putting the highs slightly out of balance with the mid-range and bass, which the Dolby B system allows to pass unaltered.

In this case, the Dolby circuitry is doing precisely what it's supposed to do. The error stems from the tape's increased sensitivity and the recorder's lack of adjustability for it. Likewise, if the bias isn't adjustable, it can introduce its own error, as can a misaligned head or tape skew, dirt on the tape or head, and so on. Some factors may offset each other; some act cumulatively. Generally speaking, when using Dolby B, the effects won't amount to serious fidelity loss by the standards of typical home users. Audio-

philes will want to be more fastidious in these respects, but the overriding popularity of the Dolby B system demonstrates the general acceptability of its behavior.

Dolby C is similar but more so: The factors giving it greater noise reduction power also make it much more susceptible to secondary errors. With twice the compansion in the 6-kHz range, for instance, the treble playback error in our supertape example would tend to be twice as severe with Dolby C as with Dolby B. Although Dolby C is saddled with a reputation for being even fussier than it actually is, it does require better basic performance out of a deck. And Dolby Laboratories has tried to discourage use of Dolby C in decks that don't achieve better minimum specs on key characteristics than those deemed acceptable for Dolby B.

Those requirements are also more stringent than those of DBX, the least demanding of all NR systems in one key respect: It is unaffected by tape sensitivity because its companding is constant throughout its operating dynamic range. And because DBX companding affects all audio-band frequencies equally, it's unlikely ever to put one frequency range out of balance with another. It does have the highest expansion ratio, however, and therefore can exaggerate secondary errors when they occur.

Under some circumstances, DBX can produce audible "pumping" of the background cassette noise. I've only heard it a few times, and only on signals of extremely wide dynamic range recorded on ferric tape (with the inherently higher hiss output of its 120-microsecond recording equalization) or when recording levels were set far too conservatively. DBX's dynamic range is extremely wide, but it's not infinite. I regularly record FM programs with DBX on ferric tape, however—even on some old C-120s whose hiss level is higher than in current products. By setting the level carefully to begin with and relying on the broadcast engineers to keep dynamic range from becoming extreme, it's possible to avoid audible misbehavior.

I rarely have the chance to make DBX tapes for others, because so few people I know have DBX playback equipment. Nor do I make Dolby C tapes for friends, because I've found it more susceptible to the differences between decks than either Dolby B or DBX. In recent experiments with two audiophile models near the top of their respective lines, I found them essentially interchangeable with DBX tapes, but not with Dolby C, where tapes made on one deck sounded distinctly muffled when played on the other. Why? There are too many possible reasons for me to be sure of any one.

For the most part, however, I've had good results when playing my large collection of Dolby C tapes (made on a bewildering list of equipment being evaluated for this magazine) on whatever deck happened to be at hand. But I do guard against problems by using Dolby B when I make tapes for others. ■

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Test Reports

We kick off this month's test reports with a look at the Pioneer CLD-1010 (middle)—the first CD-Video player capable of playing all four formats (regular CDs, 5-inch CD-Vs, and 8- and 12-inch laser videodiscs). At the bottom of the stack is NEC's unusually capable AVR-700 audio-video receiver, which has a built-in surround-sound decoder. And on top is the ADC Sound Shaper SS-525X automatic graphic equalizer/analyzer. Also reviewed in this issue are the Parasound D/AS-1000 high-headroom power amplifier and the EPI T/E-280 loudspeaker. Reports follow.



Report preparation supervised by Michael Riggs, David Ranada, Christopher J. Esse, Robert Long, and Edward J. Foster. Laboratory data (unless otherwise indicated) is supplied by Diversified Science Laboratories.

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High Fidelity magazine noted that "...it seems to open a curtain and reveal a deployment of musical forces extending behind, between and beyond the speakers." According to another reviewer, "It brings the listener substantially closer to that elusive sonic illusion of being in the presence of a live performance."

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The Sonic Hologram Generator in the Carver 4000t Preamplifier, C-1 Preamplifier and Carver Receiver 2000 solve this muddling of sound arrivals

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Test Reports

Pioneer CLD-1010 Combination CD-V Player

It seems only proper that Pioneer, the most consistent supporter of the Philips-invented laser videodisc system, be the first company to produce a player that can play everything. Specifically, the CLD-1010 can play 8- and 12-inch videodiscs with digitally encoded soundtracks (and older ones with analog-only sound), audio-only CDs, and the newest wrinkle, the "5-inch" (actually 12 centimeters, or about 4 7/8 inches) CD-V single containing 20 minutes of CD-compatible audio plus 5 minutes of video with a digitally encoded soundtrack.

Being first does have its drawbacks, though. The incorporation of 5-inch CD-V capability was apparently so hasty (because Philips's announcement of the new format and the renaming of the entire laser videodisc medium to "CD-V" was so sudden) that it is not even mentioned in our copy of the unit's otherwise well-organized and helpful instruction manual. Instead, the playing of 5-inch CD-Vs is covered in a four-page addendum entitled "How to Play CD with Video" (there being, at the time of its writing, some confusion as to the relationship between the medium's new name and Pioneer's Laser-Vision trademark). That, however, is the most significant quirk we encountered with the unit, and even it may disappear with future versions of the manual. In updating its CLD-909 (test report, January) to full CD-V status, Pioneer has managed to make quite a few improvements to an already outstanding product.

Some of the enhancements are immediately obvious from the front panel. No longer are nearly all the controls located exclusively on the supplied wireless remote: The 1010's front panel has pushbuttons for track (CD) or chapter (videodisc) skipping, forward and reverse scanning (in which picture and sound remain visible and audible), and play/pause that duplicate those on the handset, in addition to the power switch and numerous indicator lights. These buttons are the absolute minimum necessary for convenient Laserdisc or CD playback, and it is nice to have them on the front of the player where they cannot, unlike the remote, get lost under the Sunday paper and where they are helpful while changing or flipping a disc. All other player functions are controlled by the remote, which itself has received some ergonomic improvements exemplified by its enlarged and easily located play and scan buttons.

As with most ordinary CD players, the 1010's disc-loading mechanism is fully automated, opening and closing the drawer under pushbutton control. (The CLD-909's most annoying characteristic was its semiautomatic loading system, which required that you pull the drawer fully open

and push it closed.) Since the 1010's drawer, like its predecessor's, does not extend out fully when open, a 12-inch disc can be scuffed on the top lip of the drawer opening if care is not taken when loading it. The drawer accommodates the loading of the two smaller disc sizes, 8- and 5-inch, with no problem.

As with all of Pioneer's earlier videodisc players, the CLD-1010 has a comprehensive array of operating features. In fact, a cross-reference chart on the last page of the manual (possibly the single most useful page in the tome) lists 34 functions that are controlled by the remote. Depending on the "flavor" of videodisc you are playing (standard-play CAV or extended-play CLV), the precise mix of available features will change, as it does, for instance, when a CD or 5-inch CD-V is

played.

Common to all forms of disc playback is a ten-memory programmed playback feature that operates on CD track numbers or videodisc chapter numbers. (Programmed playback is not possible on discs without such cueing points.) Cueing for videodiscs can be by chapter number, elapsed time from the beginning of the disc (CLV only), or frame number (CAV only). CD cueing is by track number or by time from the start of a track. The front panel has a minimal display—just the number of the track or chapter being played—so, to achieve more precise cueing, you must use your video monitor. There, the 1010 will display the necessary track/chapter and frame/time information.

Repeat modes for both audio and video discs include single chapter/track, full side, memorized-program, and user-defined segment (A-B repeat). Memory repeat, a mode we have not encountered before, is also provided. Although the manual states that the function "allows you to specify a scene which you want to see again, so that you can return to the



Dimensions: 16 1/2 by 4 3/4 inches (front), 16 1/4 inches deep plus clearance for connections.

Price: \$800.

Warranty: "Limited," one year parts and labor.

Manufacturer: Pioneer Electronics Corp., Japan.

U.S. Distributor: Pioneer Electronics (U.S.A.), P.O. Box 1760, Long Beach, Calif. 90801.

Test Reports

scene again at any time," memory repeat also operates on audio-only CDs and is useful for rehearing the "good parts." With a 5-inch CD-V, the repeat, scan, and programmed-play functions operate separately on the audio-only and video sections of the disc. That is, you cannot perform any operation that would require the player to automatically change playback mode from video to audio or vice versa. Manual selection between audio and video sections of a 5-inch CD-V is possible via the remote.

Functions reserved for CAV videodiscs include still frame, frame-by-frame advance or reverse, and multispeed playback (with a choice of 1/10, 1/8, 1/4, 1/2, 1, 2, and 3 times normal speed). The 1010, like earlier Pioneer videodisc players, can be switched to give three different audio

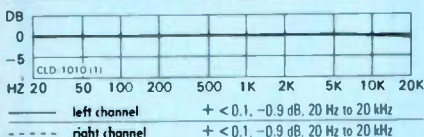
tracks of videodiscs. The redundancy of these jacks is made clear by the manual's claim that they are "for developmental use. They do not need to be used for ordinary operation." These jacks can be considered the electronic analog of one's appendix.

In overall measured performance, the CLD-1010 is the best videodisc player we have ever reviewed. Of particular note are the audio performance while playing a videodisc with a digitally encoded soundtrack and the outstanding video performance. Chroma differential gain and phase and chroma phase error are essentially nonexistent, indicating that the colors fed to your monitor are precisely what they are supposed to be (you may have to compensate for the slightly low chroma level by turning up the color knob on your

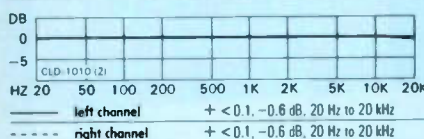
COMPACT DISC PLAYBACK

All data were obtained using the Sony YEDS-7, Technics SH-CD001, Philips 410 055-2, and Philips 410 056-2 test discs.

FREQUENCY RESPONSE WITHOUT OE-EMPHASIS



FREQUENCY RESPONSE WITH OE-EMPHASIS



CHANNEL SEPARATION (at 1 kHz)

101 dB

CHANNEL BALANCE (at 1 kHz)

± < 0.1 dB

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

without de-emphasis 98 1/2 dB

with de-emphasis 101 3/4 dB

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

at 0 dB < 0.010%

at -24 dB ≤ 0.049%

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

0 to -20 dB < 0.010%

at -30 dB 0.013%

LINEARITY (at 1 kHz)

0 to -60 dB no measurable error

at -70 dB +0.4 dB

at -80 dB -0.9 dB

at -90 dB +2.3 dB

TRACKING & ERROR-CORRECTION

maximum signal-layer gap ≥ 900 μm

maximum surface obstruction ≈ 600 μm

simulated-fingerprint test pass

MAXIMUM OUTPUT LEVEL 2.12 volts

OUTPUT IMPEDANCE 220 ohms

VIDEODISC PLAYBACK

All data obtained using the Pioneer M-1 and F-2 test discs.

AUDIO FREQUENCY RESPONSE

digital + < 0.1, -0.9 dB, 20 Hz to 20 kHz

FM (CX off) +0, -4.6 dB, 20 Hz to 20 kHz

CHANNEL SEPARATION (at 1 kHz)

digital 102 3/4 dB

FM 56 1/2 dB

CHANNEL BALANCE (at 1 kHz)

digital ± < 0.1 dB

FM ± 0.3 dB

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

digital (without de-emphasis) 98 1/4 dB

digital (with de-emphasis) 101 1/2 dB

FM (CX off) 61 1/2 dB

FM (CX on) 69 1/2 dB

HARMONIC DISTORTION (THD at 1 kHz, 0 dB)

digital < 0.01%

FM 0.14%

LINEARITY (digital; at 1 kHz)

0 to -50 dB no measurable error

AUDIO OUTPUT LEVEL (at 0 dB)

digital 2.12 volts

FM 0.55 volt

VIDEO FREQUENCY RESPONSE

at 500 kHz -1/4 dB

at 1.25 MHz -1 1/2 dB

at 2.0 MHz -1 1/4 dB

at 3.0 MHz -3 dB

at 3.58 MHz -3 dB

at 4.1 MHz -5 3/4 dB

LUMINANCE LEVEL

5% high

GRAY-SCALE NONLINEARITY (worst case)

≈ 20%

CHROMA LEVEL

≈ 2 3/4 dB low

CHROMA DIFFERENTIAL GAIN

-

CHROMA DIFFERENTIAL PHASE

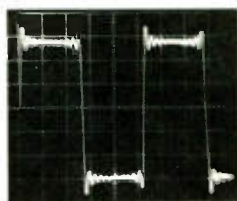
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MEDIAN CHROMA PHASE ERROR

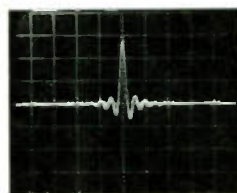
0°

* Unmeasurable—below noise level

SQUARE-WAVE RESPONSE (1 kHz)



IMPULSE RESPONSE



feeds: stereo, left recorded channel through both outputs, and right recorded channel through both outputs. The last two modes are important when playing bilingual discs, which are less rare in Japan than in the U.S.

Hookup to an audio-video system is simple. Video can be obtained either directly from the unit's back-panel NTSC composite-video output (a pin jack) or as a Channel 3 or 4 VHF television signal fed from an F-connector. The audio carried on the VHF output is monaural and activated only when playing a videodisc. So for best sound quality, the audio-output pin jacks labeled CV/LV are used. They serve for both CD and videodisc sound playback. There is a second pair of audio output connectors labeled LV/ANALOG carrying only the analog (FM) sound-

set). Maximum gray-scale nonlinearity is a bit high, but the fairly flat video frequency response at high frequencies implies a luminance resolution surpassing broadcast standards. Indeed, on the classic wedge-shaped resolution test pattern contained on one of the video test discs, visible luminance resolution exceeded 360 lines. This is one videodisc player that will give Super VHS a run for its money.

In overall audio performance, the CLD-1010 can stand comparison with the best CD-only players. True, its frequency response does droop a tiny bit at the highest frequencies, and the maximum surface obstruction (a painted black dot) it could play without mistracking was 600 micrometers, instead of the test disc's 800-micrometer maximum. But we never detected any untoward sonic effects due to fre-

Test Reports

quency response or tracking problems. In fact, we *heard* nothing wrong with the CLD-1010 at all. Pioneer also seems to have corrected the absolute-phase (polarity) inversion present on the CD output of the CLD-909, while supplying whatever additional marketing and phase-response cachet that accrues from having a two-times oversampling digital filter operating on the CD sound and on digitally encoded soundtracks.

Through the courtesy of Polygram, we were able to obtain a test pressing of a 5-inch CD-V to exercise the CLD-1010 with the new format. It worked just as promised in the manual's addendum. It started playing the video track soon after the disc was loaded, and after the video track was finished, it played the three audio-only cuts. We could, at any time, switch between the beginnings of the video and audio-only sections by pressing SEARCH/MEMORY on the remote. Going from video

to audio-only took about 9 seconds; the reverse took 15 seconds. Although Diversified Science Laboratories conducted no specific tests for 5-inch CD-V performance—there being no test discs made specifically for the medium—we are confident that the CLD-1010's performance in this mode matches what we found for conventional CDs and videodiscs.

By the time you read this, the marketing push for and product distribution of CD-V software will have started. These will no doubt be accompanied by the introduction of many more CD-V players, some from companies with no previous experience in the videodisc field. The folks at Pioneer have been continuously in the videodisc business longer than anybody else, and their experience with the medium definitely shows—and can be seen and heard—with the CLD-1010. Those newcomers will have a tough standard to live up to. ■

For years, ADC has been something of a specialist in graphic equalizers, which are the only audio electronics products it has offered for some time. (The new-products report in this issue details its plans to broaden the line this fall.) The company's Sound Shaper models have been both attractive and attractively priced, and the SS-525X is typical in both respects. It has a wealth of the most-wanted features in a home unit—including a real-time analyzer (RTA) with pink-noise generator and condenser microphone—at much lower cost than we've seen in some models of comparable capabilities.

The SS-525X has versatile connections and switching for two tape decks, enabling you to monitor either and dub between them in both directions. You can apply equalization to the source feed, to the feed from one deck to the other, or to the playback output. The pink-noise source can feed the speakers, for either automatic or manual equalization via the calibration mike, or it can be used to assess the response of an electronic component—for instance, as an aid in setting bias on a cassette deck. The analyzer display (which is calibrated so that 1 volt on the line-level inputs registers as 100 dB in the numerical level indicator) also makes an excellent tool for determining the spectral content of the signal and, therefore, its headroom demands during recording. The display also doubles as the visual replacement for the mechanical slider settings of a conventional equalizer, because the SS-525X is adjusted totally electronically.

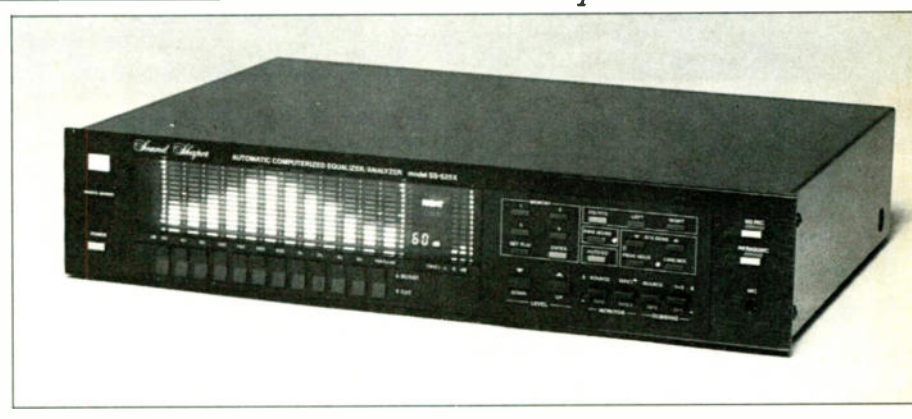
As an equalizer, the SS-525X operates on six full-octave bands above 250 Hz and in six bands two thirds of an octave wide at

and below 250 Hz. The setting for each band is displayed on a column calibrated from +12 to -12 dB, in 2-dB increments, relative to a reference 0 dB that represents flattest response. One channel is displayed at a time (unless you press both channel buttons to display a composite); the readout tells you which channel is being ad-

justed and whether the other channel matches it. To preserve good imaging, the generally excellent manual recommends that you avoid different equalization in the two channels; you may want to do so deliberately, however, to simulate stereo from mono sources, for instance.

The front panel comprises two main sections—the display plus the individual-band adjustment steppers to the left, the control panel to the right—with a few additional outriders. In addition to the columns that display individual bands, two smaller ones at the right end of the display area show overall level in each channel. ▶

ADC Sound Shaper SS-525X Equalizer/Analyzer



Dimensions: 17¼ by 3½ inches (front panel), 12 inches deep plus clearance for connections.

AC Convenience Outlet: One unswitched (200 watts max.).

Price: \$600.

Warranty: "Limited," two years parts and labor.

Manufacturer: Made in Japan for the ADC Division of DBX, Inc., a division of BSR NA, Ltd., 71 Chapel St., Newton, Mass. 02195.

Test Reports

The controls include the four programmable equalization memories (plus the memory button and one to restore flat response); the EQ/RTA button shifting the level display between equalizer and analyzer; two buttons for selecting the channel displayed; buttons for the pink-noise generator and auto-EQ; the RTA controls (sensitivity in six levels, 10 dB apart, and peak hold, which releases only manually); and line/mike source.

All these controls are duplicated on the supplied wireless remote control, which takes two AA cells. In addition, the remote has a separate button for each control band and boost/cut steppers. A remote is not just a convenience here: The only correct spot for the assessment of speaker/room equalization is the listening

extremely well behaved. Marked values of level and frequency aren't precisely on the money, but they're as near as you have any right to demand in home equipment. Compare, for example, Diversified Science Laboratories' measured RTA pass-band center frequencies with the values marked on the front panel: 23 (approximately)/25 Hz, 39/40 Hz, 64/63 Hz, 100/100 Hz, 180/160 Hz, 250/250 Hz, 520/500 Hz, 1.05/1 kHz, 2.02/2 kHz, 4.12/4 kHz, 7.9/8 kHz, and 16/16 kHz.

Similarly, the maximum boost and cut when you adjust single equalizer bands is invariably within 1 dB of the nominal ± 12 dB. And a check of the 1-kHz band showed that the actual increments were within a small fraction of the nominal 2 dB, which is truly exceptional. The three-band test (second graph) shows fairly sharp bands, which induce considerable ripple when contiguous bands are set to the same extremes, but which also keep them relatively independent of one another when they are set to opposite extremes. In the bass, where the bands are closer together, they also are a bit narrower (higher Q). Otherwise, they perform very much like the upper bands.

When DSL came to measure distortion with the controls set for "flat" response (the normal technique), nothing was found above our reporting threshold of 0.01 percent, which is unusual. Lest this setting cut the equalizer circuitry entirely out of the signal path and thereby mask a distortion problem when the device is used for its intended purpose, the lab repeated the test with all bands set to +2 dB (the minimum increment). Though this technique isn't entirely cricket (it can induce response ripple, while the measurement technique presupposes a linear medium), it did confirm the design's excellence. Even with this setting, distortion did not exceed our reporting threshold up through the 1-kHz band. At higher frequencies, distortion did creep up, but it never exceeded 0.1 percent and consisted entirely of the second harmonic.

The noise measured an excellent 95 dB below reference level with all bands flat (0 dB cut or boost). The worst setting the lab could find—and it's one we wouldn't expect to find duplicated in practice—was with the bottom six bands at their minima and the top six at their maxima. The measured noise with that setting was still better than tolerable at almost 70 dB down; you can rely on saner settings to do better than that.

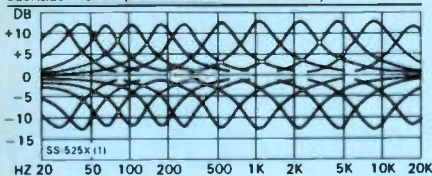
There is a slight (0.3 dB) loss in signals passing through the SS-525X at its maximum level setting, but with all bands set flat. Headroom at the input is adequate, but not ample; clipping begins at 4.7 volts

(Continued on page 32)

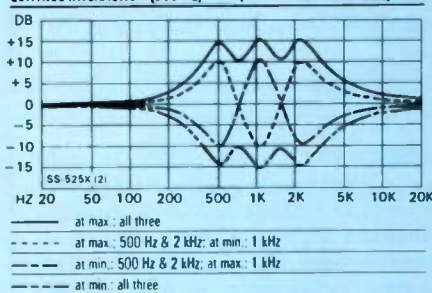
OUTPUT AT CLIPPING (at 1 kHz)	see text
MAXIMUM INPUT LEVEL (at 1 kHz)	4.7 volts
AUDIO GAIN	-0.3 dB (open circuit)
S/N RATIO (re 0.5 volt, A-weighted)	
worst case (see text)	69 1/2 dB
with all controls set "flat"	95 dB
HARMONIC DISTORTION (THD; 20 Hz to 20 kHz)	
at 2-volt output	< 0.01%

FREQUENCY RESPONSE	
	+0, -1/4 dB, 25 Hz to 36.2 kHz
	+0, -3 dB, < 10 Hz to 268 kHz

EQUALIZER ACTION (individual controls at max. & min.)



CONTROL INTERACTION (500-Hz, 1-kHz, & 2-kHz at max. or min.)



CHANNEL SEPARATION (at 1 kHz)	70 3/4 dB
INPUT IMPEDANCE	170 ohms
OUTPUT IMPEDANCE	390 ohms

position. If you don't have a remote and can't place the equalizer next to your chair, operating it can be an excessively peripatetic occupation.

Across the bottom of the front panel, beneath the major controls, are up and down level steppers—which control the selected channel and, therefore, channel balance—and the various tape switches. At the far right of the front panel are switches for the equalization path (before or after the tape loops) and the infrasonic filter. The power switch, pilot light, and remote sensor are at the far left.

In addition to the jacks for line and tape connections, the back panel has an accessory AC outlet and a compartment for the two AA cells that maintain the memories for the four equalization curves and for the last settings before shutoff. These memories will hold for limited periods even without the battery backup or AC, but you probably will want to power the SS-525X (plus anything plugged into its convenience outlet) from a switched outlet on your preamp (separate or integrated), cutting off the AC for long periods.

Both the equalizer and the analyzer are

Now we do for Amadeus what we've always done for Mozart.

For years you've relied on Yamaha to faithfully reproduce the vibrancy and clarity of your music.

Now, innovative Yamaha technology does the same for your favorite movie videos as well.

Introducing the RX-1100U. The Yamaha receiver that combines our legendary audio quality with broadcast quality video. A major enhancement to our long line of successful receivers.

In fact, the RX-1100U contains so many exciting features, you might want to visit your authorized Yamaha dealer and spend a few minutes exploring them for yourself.



Start by playing a video cassette through the RX-1100U. And watch the results on the finest video monitor.

The powerful new video-enhancing circuitry restores clarity and sharpness to even the weakest, noisiest video signal. So any prerecorded tape looks network crisp.

Then grab a camera, shoot a few minutes of tape on your own, and use the video enhancer while making a third generation dub.

You'll have a hard time telling the dub from the original.

While you're at it, experiment with the new video Rec Out Selector feature. Use it to mix your video with different audio sources to create original music backgrounds and sound effects.

Just like a post-production shop. Next, take the most musically demanding CD, crank open the 125 watt/channel* amplifier, and listen to what's missing.

Distortion. It's not there because the RX-1100U boasts our new Absolute Linear Amplification (ALA) circuitry.



This advanced amplifier technology injects a mirror image of the output distortion back into the input stage. The distortion component drops virtually to zero.

What's more, this receiver has plenty of headroom—up to 360 watts/channel into a 2 ohm load—so it's never cramped by the wider dynamic range and varying speaker impedances associated with digital sources.

Now, walk to the other side of the room, where you can appreciate the new RS interactive remote control to its fullest.

Notice how it packs fingertip operation of the receiver, as well as other Yamaha RS-remote CD players, cassette decks and turntables, into one slim hand-held unit that ends coffee table clutter forever.

Home entertainment has certainly changed. It had to. You started out as an audiophile and find yourself becoming a videophile as well. Or vice versa.



But you can still trust Yamaha to satisfy your needs.

Because when you want to know what's new in top performing equipment, we've always been the ones to listen to.

Now, with our RX-1100U, we're the ones to keep an eye on as well.

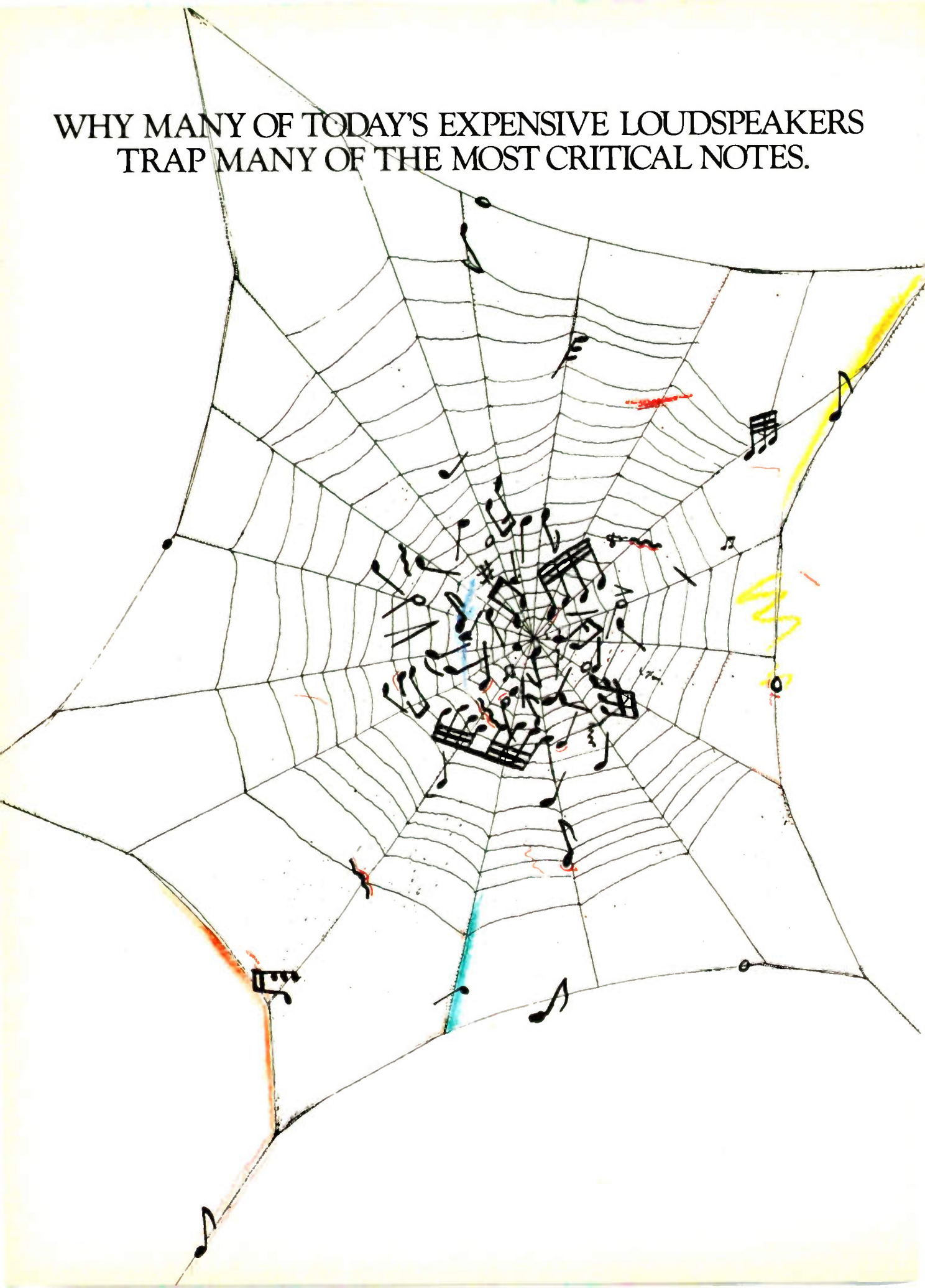
125 watts RMS per channel, both channels driven into 8 ohms, from 20 to 20,000 Hz, at more than 0.05% Total Harmonic Distortion.



YAMAHA 1887-1987

Yamaha Electronics Corporation, U.S.A., P.O. Box 6660, Buena Park, CA 90622

WHY MANY OF TODAY'S EXPENSIVE LOUDSPEAKERS
TRAP MANY OF THE MOST CRITICAL NOTES.



The music that goes into many of today's highly priced loudspeakers isn't always the same music that comes out. Many of the finer notes and nuances are often trapped or lost. Why? Because advanced recording techniques and digital processing demand a dynamic range of over 90 dB and an extended frequency response. Demands that are often beyond the limits of ordinary loudspeakers.

The truth is, most people can't hear what's missing from their music—like a broad frequency range—or what's been added—like coloring or distortion. But there are a few who can.

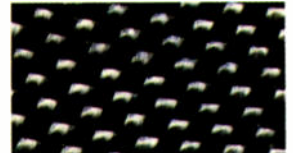
For that select group, listeners with well trained ears, Altec Lansing has engineered a new line of loudspeakers to recreate every subtlety of recorded music with a clear open sound and without coloring or distortion. Even the accuracy of CD recordings can be more fully appreciated on these Altec Lansing loudspeakers, prompting Stereo Review to remark "...the bass distortion was among the lowest we have measured. The speakers have...very good bass, and a warm, extended and unstrained character."

The secret to Altec Lansing's consummate performance? Remarkably sophisticated technology. Like woofers of a woven carbon fiber material (instead of paper or polypropylene) that is extremely rigid yet sufficiently light for maximum transient response and extraordinary low frequency definition. The result is a pure, clean, deep bass that beautifully complements the performance of our mid and high frequency polyimide/titanium



Polyimide/Titanium
Mid-range

domed drivers. Virtues like these compelled Stereo Review to also comment on Altec Lansing's "...high sensitivity and ability to absorb large power inputs... a



Carbon Fibers in Woofer Cone

speaker that can develop high sound pressure levels in any environment." Even the hand crafted walnut veneered cabinets utilize the latest computer aided design techniques, thick walls and extra bracing to eliminate resonance.

So come hear Altec Lansing loudspeakers. And discover just how much of your music has been trapped by less than extraordinary loudspeakers. Call 1-800-ALTEC 88 for information and the Altec dealer nearest you. (In PA 717-296 HIFI.) In Canada call 416-496-0587 or write 265 Hood Road, Markham, Ontario L3R 4N3.



ALTEC LANSING
LOUDSPEAKERS FOR
THE WELL-TRAINED EAR

Test Reports

NEC AVR-700 AM/FM Audio- Video Receiver



Dimensions: 17 by 5½ inches (front panel), 17 inches deep plus clearance for connections.

AC Convenience Outlets: Two switched (100 watts max. total).

Price: \$649.

Warranty: "Limited," two years parts and labor.

Manufacturer: NEC Corp., Japan.

U.S. Distributor: NEC Home Electronics (U.S.A.), Inc., 1225 Michael Dr., Wood Dale, Ill. 60191.

(Continued from page 28)

(which translates to about 4.5 volts at the output) at 1 kHz. Maximum unclipped output is determined by that input restriction, plus or minus whatever gain or loss the equalizer settings may impose on the signal as it passes through.

The frequency responses of the pink-noise generator and the analyzer display are a reasonable match to those of the lab's professional gear. But the display's fairly coarse (2 dB) resolution and its short time constant (which produces jittering traces unless you rely on the peak-hold feature, which isn't appropriate for all purposes) inhibit unequivocal judgment. The bouncing of the analyzer bands also seems to affect the auto-equalization performance, since several run-throughs with one set of speakers produced somewhat different

compensating EQ curves with each try. However, the SS-525X is no different in this regard from the other automated equalizers we have tested when they are used for room or speaker response smoothing. Of course, no home equalizer/analyzer can be expected to match the precision of professional equipment in these respects.

The only valid comparison is to other home equipment we have tested, and the SS-525X need make no apologies in that respect. It is thoughtfully designed, comprehensive in its capabilities, and unusually precise in its behavior, which speaks eloquently of the care that has been taken with circuit design. It is, in a word, impressive. And, at the risk of sounding flippant about a serious product, we found it a lot of fun to use. ■

In a sense, the NEC AVR-700 is the archetypical receiver of today. It combines the functions and features of an audio receiver with switching for video sources, a surround processor (complete with two extra channels of amplification), and a remote control capable of handling tape and tuner functions for a whole NEC audio-video system. At the same time,

came to understand the receiver's operation, we also began to appreciate how its design reduces the number of controls and, therefore, the clutter and confusion endemic to audio-video receivers. Moreover, the supplied remote handset offers the usual button arrays for source and preset selection, in addition to controls for an NEC K-700 audio cassette deck (via an umbilical to a jack on the receiver's back panel) and a considerable number of NEC VCRs and TV sets (via direct remote-to-sensor signaling).

There are two front-panel preset steppers for presets 1-8 and 9-16, any of which can be programmed for a station on either band. But one thing may put you off: If you step past the preset you want, you must continue around the cycle of eight to return to it. These controls are located toward the left end of the receiver, along with the manual band selector, tuning steppers (full-channel increments in either direction on either band: 200 kHz for FM, 10 kHz for AM), and on/standby, which shuts down most functions but retains memorized information (including settings at turnoff) and the ability to respond to a turn-on signal from the remote.

however, NEC's realization of this format is distinctly individual. Video is integrated more thoroughly into the AVR-700's operation than in most comparable models we've tested, and the front panel's stepping controls are in marked contrast to the sort of knob-and-button arrays we're used to seeing on audio gear.

Whether the NEC approach is inherently good or bad is a very personal judgment call. Frankly, we initially disliked it because everything wasn't laid out before us in the manner to which we've become so accustomed over the years. But as we

At the right end of the same rank are steppers for input and surround mode. The input (source) options are phono (fixed coil), built-in tuner, CD, tape (audio), aux (audio or video), TV, and VCR. Since the AVR-700 is not the most elaborate receiver in the NEC audio-video line, its highest priority is integrating the audio and video elements gracefully, rather than accommodating an exceptionally sophisticated collection of them. Hence, it has no moving-coil phono option, no tape monitoring while you're recording, and a provision for only one audio deck and one VCR. But you can dub audio—either from VCR

to tape or vice versa—by choosing one deck as the input. And you can receive simulcasts by first selecting the VCR input to get the video portion from the deck's tuner, then selecting the built-in FM tuner for the audio.

The surround stepper has three options: Dolby, "matrix," and bypass (off). The last sets the AVR-700 for operation as a conventional stereo receiver rated at 70 watts (18.5 dBW) per channel; the other two add a pair of half-power (15.5-dBW) channels for back speakers. The Dolby mode is optimized for Dolby Surround encoded soundtracks (on videodiscs and stereo videotapes of Dolby Stereo movies) and is suggested for most movies and video. NEC recommends the matrix mode for sports and music programs.

Also in this control group are an audio MUTE (a real one—not the usual 20-dB attenuator), three volume memory buttons

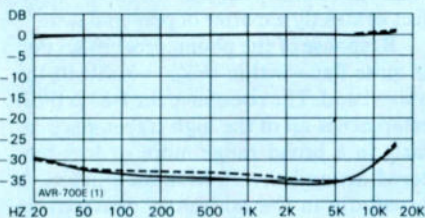
(which memorize the settings for all four speakers, storing balance as well as overall level), and a volume-reset button that can be useful when manipulating the exceptionally elaborate balance adjustment throws the overall level out of whack. The balance control is located at the bottom right of the front panel, next to the up and down volume steppers. Its central part is a diamond whose apexes control front, right, back, and left output, attenuating the signals to speaker pairs to achieve the desired effect. Triangular buttons that fill the remainder of the outer square increase the levels of the four speakers individually. Moderate adjustments are entirely intuitive and fortunately pose no problems: The directions in the manual, which is otherwise entirely adequate, aren't very clear on this matter.

The range of these level adjustments (which average 2 dB per step in Diversi-

Except as otherwise stated or implied, all measurements were made at front speaker outputs with surround processor bypassed and input level at median of adjustment range.

FM TUNER SECTION

FREQUENCY RESPONSE & CHANNEL SEPARATION



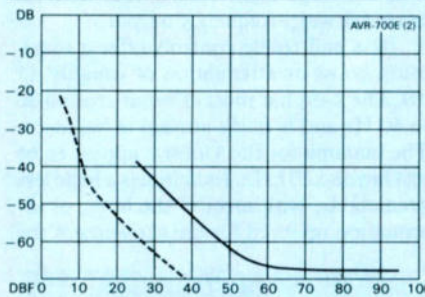
Frequency response

left channel	+ 3/4, - 1/2 dB, 20 Hz to 15 kHz
right channel	+ 1, - 1/2 dB, 20 Hz to 15 kHz

Channel separation

	≥ 32 dB, 65 Hz to 8.8 kHz
	≥ 26 1/2 dB, 20 Hz to 15 kHz

SENSITIVITY & QUIETING



stereo quieting (noise)

mono quieting (noise)

Stereo sensitivity (for 50-dB noise suppression)

	36 1/2 dBf at 98 MHz, with 0.56% THD + N
	(39 dBf at 90 MHz; 36 3/4 dBf at 106 MHz)

Mono sensitivity (for 50-dB noise suppression)

	17 dBf at 98 MHz
--	------------------

Muting threshold	24 1/2 dBf
------------------	------------

Stereo threshold	24 1/2 dBf
------------------	------------

Stereo S/N ratio (at 65 dBf)	67 1/4 dB
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Mono S/N ratio (at 65 dBf)	74 dB
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CAPTURE RATIO	1.4 dB
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SELECTIVITY

alternate-channel	62 dB
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adjacent-channel	5 1/2 dB
------------------	----------

HARMONIC DISTORTION (THD + N)

	stereo	mono
at 100 Hz	0.53%	0.28%
at 1 kHz	0.38%	0.18%
at 6 kHz	1.3%	0.21%

STEREO PILOT INTERMODULATION	0.40%
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INTERMODULATION DISTORTION (mono)	0.13%
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AM SUPPRESSION	61 3/4 dB
----------------	-----------

PILOT (19 kHz) SUPPRESSION	35 dB
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SUBCARRIER (38 kHz) SUPPRESSION	46 1/2 dB
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AMPLIFIER SECTION

RATED POWER (8 ohms)	18.5 dBW (70 watts)/channel
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OUTPUT AT CLIPPING (at 1 kHz; both channels driven)

8-ohm load	18.8 dBW (75 watts)/channel
------------	-----------------------------

4-ohm load	20.4 dBW (110 watts)/channel
------------	------------------------------

DYNAMIC POWER (at 1 kHz)

8-ohm load	19.6 dBW
------------	----------

4-ohm load	21.2 dBW
------------	----------

2-ohm load (see text)	21.0 dBW
-----------------------	----------

DYNAMIC HEADROOM (re rated power, 8-ohm load)	+ 1.1 dB
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HARMONIC DISTORTION (THD; 20 Hz to 20 kHz)

at 18.5 dBW (70 watts)	≤ 0.019%
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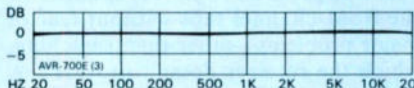
at 0 dBW (1 watt)	≤ 0.036%
-------------------	----------

FREQUENCY RESPONSE

	+ < 1/4, - 1/2 dB, < 10 Hz to 19.5 kHz
--	--

	+ < 1/4, - 3 dB, < 10 Hz to 32.8 kHz
--	--------------------------------------

RIAA PHONO EQUALIZATION



	+ 1/2, - 1/4 dB, 20 Hz to 20 kHz;
--	-----------------------------------

	- 3 3/4 dB at 5 Hz
--	--------------------

SENSITIVITY & NOISE (re 0 dBW; A-weighting)

	sensitivity	S/N ratio
aux input	38 mV	75 dB
phono input	0.62 mV	72 dB

PHONO OVERLOAD (1-kHz clipping)	155 mV
---------------------------------	--------

INPUT IMPEDANCE

aux input	48k ohms
-----------	----------

phono input	49k ohms; 235 pF
-------------	------------------

OUTPUT IMPEDANCE (to tape)

from aux input	2,100 ohms
----------------	------------

from tuner section	2,900 ohms
--------------------	------------

from phono input	1,900 ohms
------------------	------------

DAMPING FACTOR (at 50 Hz; re 8 ohms)

	115
--	-----

CHANNEL SEPARATION (at 1 kHz)

	49 1/2 dB
--	-----------

Test Reports

ABOUT THE dBW

We currently are expressing power in terms of dBW—meaning power in dB with a reference (0 dBW) of 1 watt. The conversion table will enable you to use the advantages of dBW in comparing these products to others for which you have no dBW figures.

WATTS	dBW	WATTS	dBW
1.0	0	32	15
1.25	1	40	16
1.6	2	50	17
2.0	3	63	18
2.5	4	80	19
3.2	5	100	20
4.0	6	125	21
5.0	7	160	22
6.3	8	200	23
8.0	9	250	24
10.0	10	320	25
12.5	11	400	26
16.0	12	500	27
20.0	13	630	28
25.0	14	800	29

fied Science Laboratories' measurements but actually run anywhere between 1/2 and 2 1/2 dB for individual steps) is finite. To ensure that you won't run out of adjustment steps when you manipulate the balance/level controls, NEC also supplies a pair of input-level controls that determine where the input signal will begin relative to the balance/level adjustment range. These controls are located behind a flip-down door toward the lower left of the front panel. Also hidden there are the tone controls (separate bass-and-treble pairs for front and back channels), buttons for the volume and station-preset memories, a preset-scan button, an automatic-seek/manual tuning switch, FM-mute on/off and FM mono/stereo switches, and a "vacation switch" that turns off the power altogether.

The back panel gives a good idea of what this receiver can do. Stereo audio connections—CD and phono input pairs and the audio tape deck's outputs and inputs—are at the top, next to the video monitor output. Below this, all connections for TV, VCR, and aux are in threes (left audio, right audio, and video). (There is no built-in provision to feed a single mono audio channel to both receiver channels—the FM mode switch affects that source alone—so you may have to use a "Y" adapter on the output from a mono VCR.) Antenna inputs are all lightweight binding posts, and an AM loop antenna that fits a back-panel mounting bracket is supplied. Speaker outputs (for one front and one back pair) are spring-loaded clips.

The lab concentrated its power tests on the main (front) amplifier, which proved quite capable: It handled the low-impedance loads with ease. The dynamic output at 2 ohms is limited by the protection relay, which kicked out at the 21-dBW (126-watt) level shown in our data. This isn't quite as much as the 4-ohm load elicited at clipping, but the amplifier itself showed no sign of strain. So in most cases you should be able to parallel two pairs of speakers off the front-channel taps without fear of major problems—other than switching, which the receiver doesn't provide for. And the amplifiers (including the half-power section that drives the back-channel speakers) provide more than enough output for typical surround-sound setups, even if you want considerable oomph in your *Star Wars* playback.

Dolby Surround response is deliberately band-limited in the back channels, per Dolby Labs' specifications. DSL's measurements, with all tone controls set at their center detents, show a rolloff in the deep bass (down 6 dB at 20 Hz), nearly ruler-flat response from about 100 Hz to 4 kHz, and a steep drop above about 7 kHz. Front-channel response is almost perfect-

ly flat throughout the band, with a rolloff of only about 1/2 dB at 20 kHz. And separation between channels is at least 30 dB in any test configuration, which is more than adequate. Subjectively, the Dolby Surround effects struck us as pleasant and appropriate, though not as unequivocal in imaging as can be achieved with more elaborate processors that incorporate active steering logic.

The "matrix surround" mode is quite different. The back channels aren't band-limited (the 1/2-dB rolloff appears in all traces), and the processing evidently relies more on phase shifting between channels than on separation to produce its effect, which is relatively diffuse. When a signal is fed just to the left input, the output to the back-left channel is the only one not attenuated. (With all four outputs set to deliver equal levels when fed a balanced stereo input, a left-only input yields outputs that are about 4 dB down at the left-front, 6 dB down at the right-front, and 10 dB down at the right-back.) Because realism in reproducing a specific acoustic property is beside the point here, we'd classify the desirability of the achieved effect as strictly a matter of personal taste.

Response of the phono preamp section is quite flat—within +1/2, -1/4 dB in the audio band. The rise above the 1-kHz 0-dB reference is all in the high treble, particularly in a broad range more or less centered around the 10-kHz maximum. A broad dip in the midrange, centered on about 300 Hz, and a rolloff at the very bottom both reach -1/4 dB. Rolloff doesn't increase significantly below the audio band, however. And since there is no switched infrasonic filter, either, you should take care not to feed the phono input from an arm/cartridge combination that delivers excessive warp-frequency output.

Bass and treble controls offer a maximum boost or attenuation of roughly 15 dB. The BASS has most effect at around 30 to 40 Hz and is fairly normal in behavior. The maxima for the TREBLE appear to be just beyond 20 kHz. Its action is a little less predictable, with most of the boost or attenuation reserved for the extremes of the

REPORT POLICY

Equipment reports are based on laboratory measurements and controlled listening tests. Unless otherwise noted, test data are provided by Diversified Science Laboratories. The choice of equipment to be tested rests with the editors of High Fidelity. Samples normally are supplied on loan from the manufacturer. Manufacturers are not permitted to read reports in advance of publication, and no report or portion thereof may be reproduced for any purpose or in any form without written permission of the publisher. All reports should be construed as applying to the specific samples tested. High Fidelity and Diversified Science Laboratories assume no responsibility for product performance or quality.

control's rotation; a noticeable effect extends well below 1 kHz even for moderate cut or (particularly) boost settings. No loudness compensation is built in, though you can roll your own, after a fashion, with the tone controls.

The tuner section is quite representative of those found in audio-only receivers. It can be outpaced by many top-line models, but not by much. Most of the data will stand comparison reasonably well even in competition with sophisticated separates, and unless you have reception problems that a fancier model is specifically designed to combat, audible performance should be reasonably comparable. For example, the adjacent-channel selectivity (5½ dB) is about as good as you're likely to

find even in the narrow-band modes of many separates with switchable IF filters. If, on the other hand, you have an antenna rotator, the AVR-700 gives you no instrumentation to help in orienting it.

More than most other audio-video models we've tested to date, the AVR-700 suggests that equipment designers finally are beginning to hit their stride when it comes to integrating the two categories on a single chassis. Hookup and switching, whether with the remote or the front-panel controls, is significantly less confusing than usual, even given the level/balance adjustments required by the built-in surround processor. Add the solid tuner and the ample four-channel amplifier, and we'd say it represents good value. ■

Epicure Products, like all other major loudspeaker-system manufacturers, has found the computer to be an invaluable tool for investigating the ways specific designs produce—and perturb—acoustic energy. Among the factors that can be studied through computer analysis is the manner in which speaker parts store and subsequently release energy, in effect blurring musical tones and impulses. EPI's work in this area produced the original T/E Series two years ago (the prefix T/E stands for Time/Energy). Now, further refinements, including a tweeter redesigned for greater power handling, have led to the present T/E Series II loudspeaker.

One feature of a T/E speaker is readily apparent when you remove its grille: a clear plastic woofer-cone surface, which is laminated to the cone/surround assembly in order to stiffen its diaphragm area and minimize breakup. In the two-way floor-standing T/E-280, there are two such clear plastic diaphragms: the 8-inch woofer itself and, nearer the floor, the passive radiator that loads the woofer's back wave to extend deep-bass response. Both are axially mounted on the front panel. Above the woofer and somewhat to the right is the 1-inch dome tweeter.

The grille fabric is stretched over a particleboard frame whose outer edges are rounded. The mountings hold this frame away from the baffle board, allowing sound to pass between—the only obvious measure EPI has taken to minimize diffraction. The case, which is finished in wood-grain vinyl on the baffle, sides, and top, stands on a short black plastic base. The back panel also is finished completely in black, with only a slightly recessed pair of color-coded spring-clip connections for the signal leads.

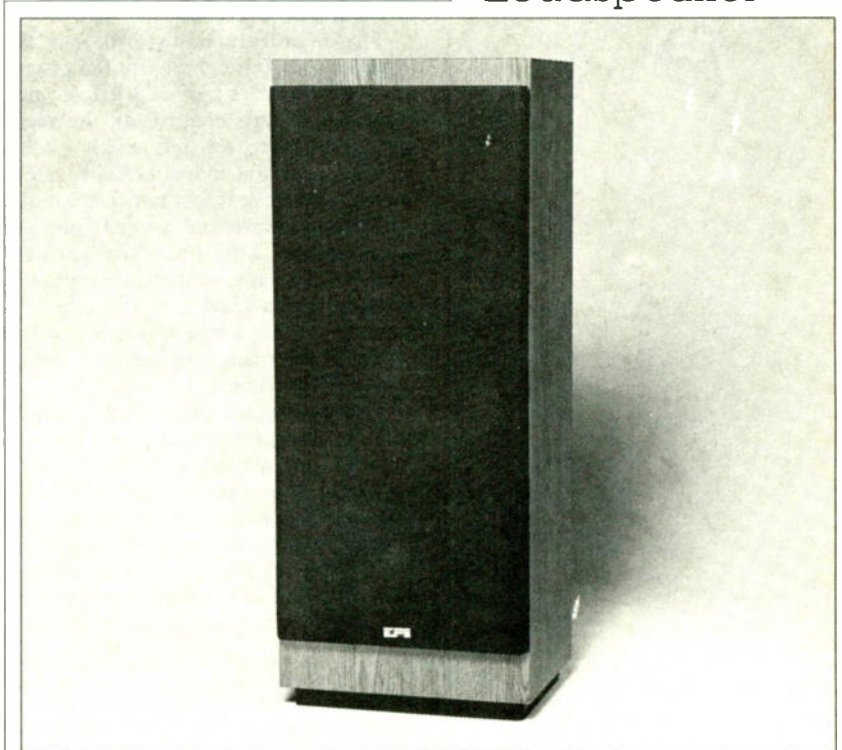
Nominal crossover (confirmed by Diversified Science Laboratories' near-field

driver measurements) is at 1.8 kHz. EPI describes it as a "simple first-order high-pass" network, designed primarily to keep lower frequencies out of the tweeter. The mechanical properties of the woofer do

likewise for the highs; there is no electrical low-pass filter. Direct radiation from the woofer holds up well into the 63-Hz test band; output from the passive radiator is centered at about 50 Hz, judging from the near-field measurements.

The owner's manual is well written but intended to cover all T/E Series II models and, perhaps for that reason, not very specific on some points. It suggests placement

EPI T/E-280 Loudspeaker

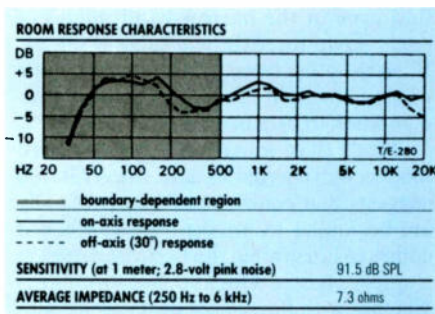


Dimensions: 12 by 30½ inches (front), 9 inches deep plus grille.

Price: \$400 per pair.

Warranty: "Limited," five years parts and labor, excluding cosmetics.

Manufacturer: Epicure Products, Inc., 25 Hale St., Newburyport, Mass. 01940.



of the speaker near the back wall, but at least three feet from side walls to prevent undue bass reinforcement. The lab placed it three inches out from the wall to measure overall response. Even including the broad dip in the 300-Hz region, which presumably is the result of floor reflection, on-axis response measures within $\pm 3\frac{1}{2}$ dB from the 40-Hz band to the highest test frequencies, which is excellent for a speaker this modest in price and overall design. Off-axis, there is some evidence of beaming, but only at the very top of the band—again, distinctly better than average for this kind of speaker.

The main features discernible in the frequency response graph are the prominence in the range around 1 kHz (which our listening tests confirmed), the slight peak near the very top (less readily audible without program material deliberately chosen to exercise it, but noticeable in the near-field measurement as well), and the midrange dip. This dip, which is somewhat more pronounced than we usually measure with a speaker of this type, appears to reflect some weakness in the woofer's upper range, as well as the usual floor-reflection effect.

To what extent the resulting colorations are more (or less) apparent than average for such a speaker depends on both taste and program material. We found that voices seemed somewhat less subject to them than instrumental sounds, which varied from an attractive liveliness to a somewhat hollow acoustic, depending on

the registers most accentuated. The overall impression is of a rather bright sound in a spacious ambience. Inner detail and stereo imaging are good for a speaker in this price range.

Sensitivity is fairly high (91.5 dB sound pressure level at 1 meter for the voltage equivalent of 0 dBW into 8 ohms) for a speaker this size, but it is quite typical for one that is, like the T/E-280, a bass-reflex design. Distortion is rather high for such a configuration, averaging about $\frac{1}{2}$ percent over most of the band even at the least demanding test level (85 dB SPL). By the time the maximum level has been reached (100 dB SPL), distortion has crept over 1 percent at most of the test frequencies. However, the speaker gave no indication of being overdriven in any of our bench or listening tests, some of which ran to considerably higher levels (at least for short periods).

Averaged across the whole audio frequency band (20 Hz to 20 kHz), impedance is spot-on the mystical 8-ohm mark, and the curve is relatively flat (suggesting an easy load for even finicky amplifiers) over most of the band. In the bass, the dual impedance peaks of a ported system (here at about 30 and 60 Hz) reach into the 20-ohm range. In the midbass (around 150 Hz), impedance drops to 4.2 ohms, which may be a bit low if you plan on paralleling speakers from a very fussy amp, and stays between this value and 9.7 ohms through the rest of the range. Averaged over what we call the "music band," it's only a little less than 8 ohms.

The principles on which EPI has based the thrust of its Time/Energy series are worthy ones. So is the idea of implementing them at a modest price, which is the *raison d'être* of the T/E-280. There is a limit to how much technology the designer can incorporate into a speaker at this price, however, and we don't find that the T/E principles raise this exemplar as much above its price peers as we might have hoped, though it does offer much to enjoy. ■

Parasound D/AS-1000 Power Amplifier

Parasound has concentrated on the needs of what it considers the entry-level audiophile. In the D/AS-1000, however, the emphasis must be placed on "audiophile" rather than "entry-level." That the D/AS-1000 comes with a 2-ohm stereo power rating sets it apart immediately. More impressive is the 2-ohm specification itself: 240 watts (23.8 dBW) per channel continuous, with exceptional headroom when measured dynamically. But the real story is how this sort of power—and dynamic headroom—is delivered.

Clearly, the amplifier is designed to handle exceptional peak current levels. It also is one of the many designs that seeks to have the best of both Class A and Class AB worlds by operating in the former mode for all but the peaks that require the greatest power drain. To handle these, the amplifier goes into overdrive, so to speak, and has access (in Class AB mode) to extra supply rails, working off a whopping 80,000 microfarads (μ F) of storage capacity. This peak mode is controlled by signal/load sensing in the feedback loop, which is said to offer better signal integrity

THE CBS COMPACT DISC CLUB HAS THE MUSIC YOU WANT TAKE ANY 3 FOR \$1 WITH MEMBERSHIP



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| <p>349985. Johnny Mathis/Henry Mancini—The Hollywood Musicals (Columbia)</p> <p>348979. Tina Turner—Break Every Rule (Capitol)</p> <p>352633. Dolly Parton/Linda Ronstadt/Emmylou Harris—Trio (Warner Bros.)</p> <p>336396-396390. Billy Joel's Greatest Hits, Vol. 1 & 2. (Columbia)</p> <p>346643. Andreas Vollenweider—Down To The Moon. (CBS)</p> <p>346478. Madonna—True Blue. (Sire)</p> <p>343319. Janet Jackson—Control (A&M)</p> <p>349571. Boston—Third Stage (MCA)</p> <p>290916. The Best Of Earth, Wind & Fire, Vol. I (Columbia/Arc)</p> | <p>257279. Bruce Springsteen—Born to Run (Columbia)</p> <p>138586. Bob Dylan's Greatest Hits (Columbia)</p> <p>319541. Bron John—Greatest Hits. (MCA)</p> <p>342105. Bangles—Different Light. (Columbia)</p> <p>287003. Eagles Greatest Hits 1971-1975 (Asylum)</p> <p>347492. Glenn Miller Orchestra—In The Digital Mood. (Digital—GRP)</p> <p>293597. Led Zeppelin—Houses Of The Holy. (Atlantic)</p> <p>350736. Rolling Stones—Rewind. (Rolling Stones Records)</p> <p>346957. Steve Winwood—Back In The High Life. (Island)</p> | <p>344622. Anita Baker—Rapture. (Elektra)</p> <p>319996-399998. Motown's 25 #1 Hits From 25 Years. (Motown)</p> <p>291278. The Doobie Brothers—Best of the Doobies. (Warner Bros.)</p> <p>345777. Peter Gabriel—So. (Geffen)</p> <p>246868. Jim Croce—Photographs And Memories—His Greatest Hits. (Sajal)</p> <p>334391. Whitney Houston. (Arista)</p> <p>314443. Neil Diamond's 12 Greatest Hits, Vol. 2. (Columbia)</p> <p>308049. Creedence Clearwater Revival Featuring John Fogerty/Chronicle. 20 greatest hits. (Fantasy)</p> | <p>343582. Van Halen—5150. (Warner Bros.)</p> <p>326629. Bruce Springsteen—Born In The U.S.A. (Columbia)</p> <p>342097. Barbro Streisand—The Broadway Album. (Columbia)</p> <p>219477. Simon & Garfunkel's Greatest Hits. (Columbia)</p> <p>348649. Pachelbel Canon & Other Digital Delights—Toronto Chamber Orch. (Digital—Fonitare)</p> <p>353771. Bolling/Rompal: Suite #2 for Flute & Jazz Piano Trio (Digital—CBS)</p> <p>348318. The Police—Every Breath You Take—The Singles (A&M)</p> <p>346312. Billy Joel—The hits. (Digital—Columbia)</p> | <p>336222. Dire Straits—Brothers In Arms. (Warner Bros.)</p> <p>341073. Steely Dan—A Decade of Steely Dan. (MCA)</p> <p>349373. Beethoven: Symphony No. 9 (Choral) Bernstein, NY. Phil. (Digitally Remastered—CBS Masterworks)</p> <p>314997-394999. Stevie Wonder's Original Musiquarium I. (Tamla)</p> <p>348110. Buddy Holly—From The Original Master Tapes. (Digitally Remastered—MCA)</p> <p>352245. David Sanborn—A Change Of Heart. (Warner Bros.)</p> <p>351692. Beastie Boys—Licensed To Ill. (Def Jam/Columbia)</p> | <p>346544. Kenny G—Duotones. (Arista)</p> <p>344721. Lionel Richie—Dancing On the Ceiling. (Motown)</p> <p>355156. Vladimir Horowitz Plays Favorite Chopin (Digitally Remastered—CBS Masterworks)</p> <p>354985. Billie Holiday—From The Original Decca Masters. (Digitally Remastered—MCA)</p> <p>323899. The Best Of The Alan Parson's Project. (Arista)</p> <p>286740. Linda Ronstadt's Greatest Hits. (Asylum)</p> <p>355115-395111. Prince—Sign 'O' The Times. (Paisley Park)</p> <p>357186. Hooters—One Way Home. (Columbia)</p> | <p>356873. The Outfield—Bangin'. (Columbia)</p> <p>355636. Ozzy Osbourne—Randy Rhoads Tribute. (CBS Assoc.)</p> <p>355529. Philip Glass—Dance Pieces. (Digital—CBS)</p> <p>355362. Whitesnake. (Geffen)</p> <p>354829. Lisa—Lisa And Cuh Jam With Full Force—Spanish Fly. (Columbia)</p> <p>354167. Dan Fogelberg—Exiles. (Full Moon/Epic)</p> <p>354100. Crowded House. (Capitol)</p> <p>354035. Dwight Yoakam—Hillbilly Deluxe. (Reprise)</p> <p>260638. Chicago's Greatest Hits. (Columbia)</p> <p>356279. Gloria Estefan And Miami Sound Machine—Let It Loose. (Epic)</p> |
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Do you have a credit card? (Check one.) Yes No

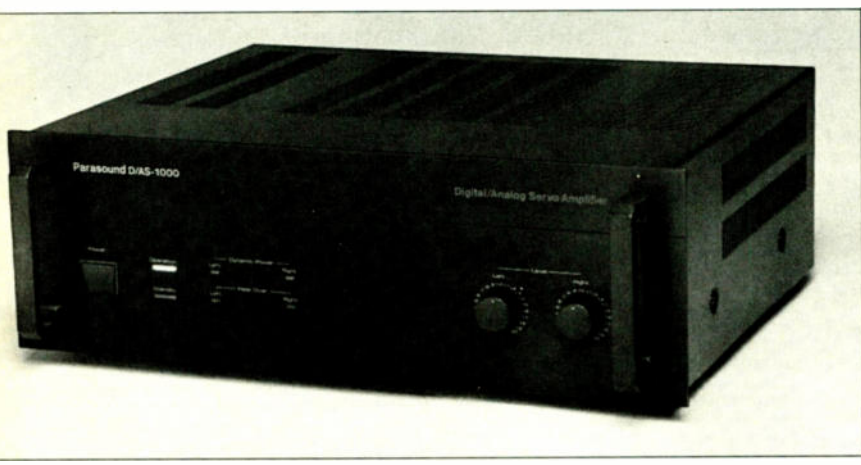
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Test Reports

and stability than some other dual-rail schemes.

Luxury touches abound—more than you would expect in so powerful an amplifier at so moderate a price. Not only are the input jacks gold-plated but, according to Parasound, so are the storage capacitors. The sturdy chassis can be fitted with rack-mount adapters that screw directly into the frame, supporting it directly rather than just by the faceplate. The front panel holds the power switch, large LEDs for power-on and “operation” (post-warmup, indicating that the protection relay has kicked in), and four small LEDs



Dimensions: 17¼ by 5½ inches (front panel), 13½ inches deep plus clearance for handles and connections.

Price: \$650; optional rack-mount adapter kit, \$28.

Warranty: “Limited,” two years parts and labor.

Manufacturer: Made in Taiwan for Parasound Products, Inc., 945 Front St., San Francisco, Calif. 94111.

(light-emitting diodes) that indicate when each channel goes into its Class AB peak mode and when each is approaching clipping.

The back-panel outputs are binding posts that can accommodate bared wires as heavy as 14-gauge, banana plugs, or spade lugs. A switch converts the amplifier to strapped mono operation with continuous power ratings of 400 watts (26 dBW) into 8 ohms or 625 watts (28 dBW) into 4 ohms and dynamic ratings of 1 kilowatt (30 dBW) into 8 ohms or 1.25 kilowatts (31 dBW) into 4 ohms. (Because the bridged configuration essentially doubles the current drain for a given load, and therefore increases the stress on the amp’s output transistors, there is no mono 2-ohm rating.)

Both in the lab and in our listening tests, however, we concentrated on the stereo mode. That the D/AS-1000 supplies plenty of power for home use goes without saying, but it does so in unusual fashion. During bench testing, for example, the lab repeatedly cranked up the level beyond those you see in the data and got out a clean signal—for a time. Eventually, the output would drop back the values listed (presumably the maximum available from the lower-voltage primary supply rails). Thus we would expect it to

have exceptional dynamic headroom, which it does. The lab couldn’t duplicate the full 5 dB claimed by Parasound, but there’s no question that both the amplitude and the duration of peaks that can pass undistorted put the dynamic capabilities of this amp well ahead of all but a handful of designs we’ve tested in this way.

Distortion is too low to be considered a problem, though it does measure higher than in many other amps, at least at the 0-dBW (1-watt) test level. Here, the relatively benign second harmonic dominates, though some third and fourth are present as well. In general, distortion rises gradually above 1 kHz at 0 dBW. At rated power, the distortion is similar all across the band: higher than at 0 dBW below 1 kHz, lower above 1 kHz. The third harmonic dominates here, but the measured levels are again too low to be of concern. Noise also is satisfactorily low. There is, in fact, no respect in which measured performance is less than fine.

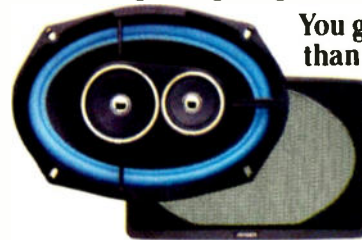
The same can be said for the amplifier’s listening quality. The D/AS-1000 is designed to handle an unusually broad range of loads, including the unconventional speakers that intrigue all audiophiles. Although we can’t document how any amplifier will handle all possible loads, the broader its repertory in this respect, the better it is likely to handle the more conventional speakers to which it probably will be attached in most cases. In all our tests, the D/AS-1000 handled whatever was thrown its way with equanimity as unflappable as that of similarly powerful amps costing considerably more. We are, in short, very impressed. ■

RATED POWER	
8-ohm load	21.1 dBW (130 watts)/channel
4-ohm load	23.0 dBW (200 watts)/channel
2-ohm load	23.8 dBW (240 watts)/channel
OUTPUT AT CLIPPING (at 1 kHz; both channels driven)	
8-ohm load	21.8 dBW (150 watts)/channel
4-ohm load	23.5 dBW (225 watts)/channel
2-ohm load	24.2 dBW (265 watts)/channel
DYNAMIC POWER	
8-ohm load	25.3 dBW
4-ohm load	26.3 dBW
2-ohm load	26.6 dBW
DYNAMIC HEADROOM (re rated power)	
8-ohm load	+4.2 dB
4-ohm load	+3.3 dB
2-ohm load	+2.8 dB
HARMONIC DISTORTION (THD; 20 Hz to 20 kHz)	
at 21.1 dBW (130 watts)	≤ 0.047%
at 0 dBW (1 watt)	≤ 0.090%
FREQUENCY RESPONSE	
	+0, -1/4, dB, < 10 Hz to 28.7 kHz
	+0, -3 dB, < 10 Hz to 101 kHz
S/N RATIO (re 0 dBW; A-weighted)	86 1/4 dB
SENSITIVITY (re 0 dBW)	61 mV
INPUT IMPEDANCE	64k ohms
DAMPING FACTOR (at 50 Hz; re 8 ohms)	190
CHANNEL SEPARATION (at 1 kHz)	56 1/2 dB

How to prepare yourself for the sound of a Jensen.

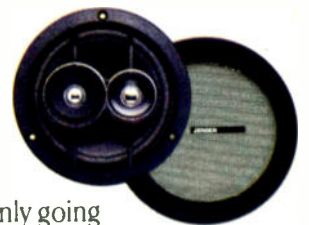


You get a certain feeling when you listen to Jensen® car speakers. It's one of pure excitement. Sheer exhilaration. Not the type of thing you experience every day. So, we suggest you warm up with something a trifle less breathtaking. Like getting shot out of a cannon.



You get a lot more than cheap thrills with Jensen Classic car speakers.

There's no rule that says you have to spend a lot of money to get a lot of thrills. That's why we loaded our Classic speakers with features you'd expect to find only on higher priced equipment. They have compact disc capabilities, making them perfect for today's music. And like all Jensen speakers, they're made in the U.S.A.



Reach for a higher level of excitement with Jensen JXL's.

Some of you enjoy not only going to the edge, but one step beyond. JXL's can take you there. We could brag about their long throw woofers. Polycarbonate tweeters. 175 watts power handling. Or the fact they're compact disc ready. But what's most important is they create a sound that'll put more than a few butterflies in your stomach.

So, go jump out of an airplane. Wrestle an alligator. Do whatever it takes to prepare yourself for the dynamic sound of a Jensen. Then go to your nearest Jensen dealer and take a shot at the real thing.



JENSEN®

We make music a moving experience.

COMPACT DISC



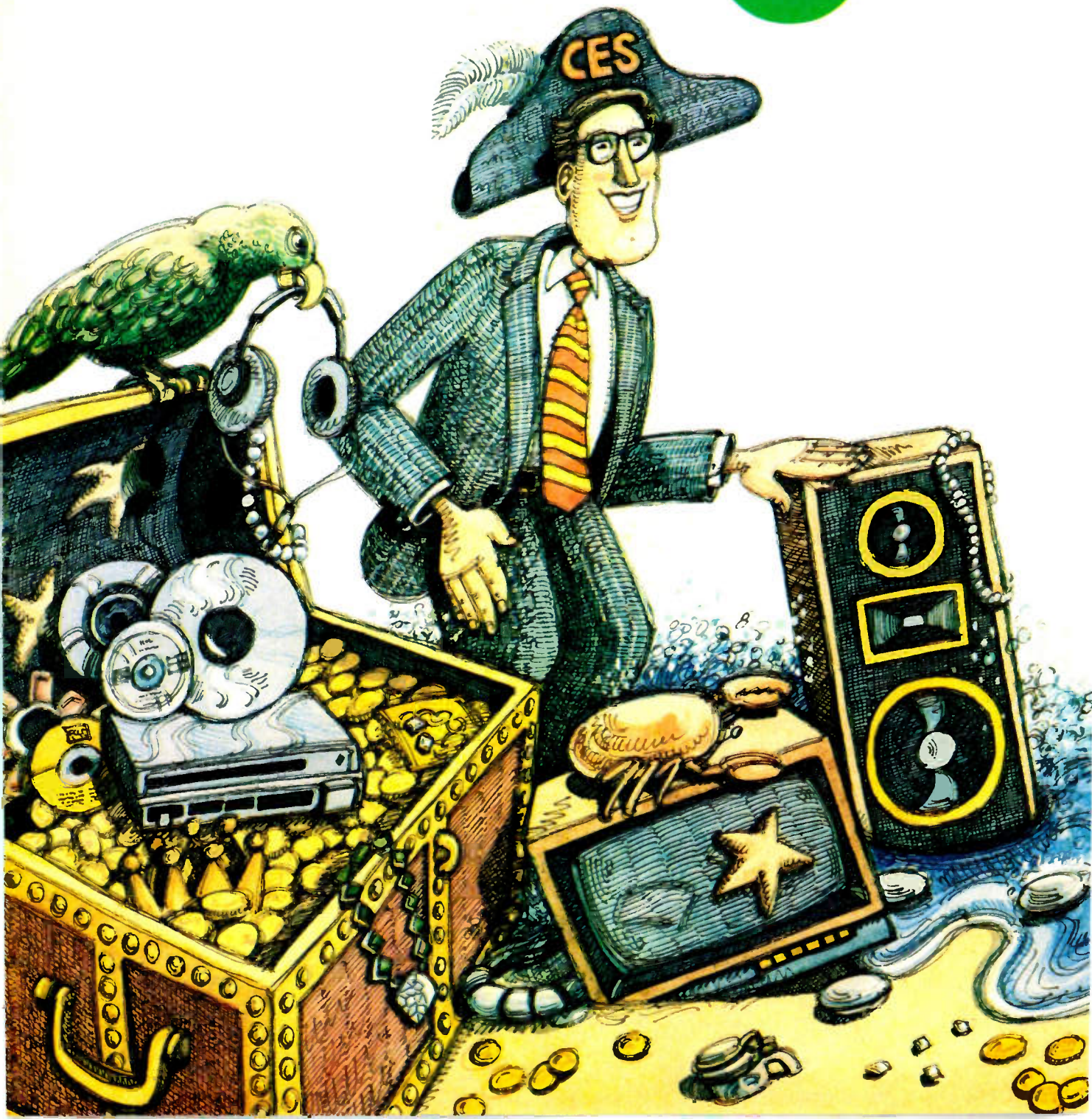
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Exciting Finds from
the Summer Consumer
Electronics Show

By Robert Long and E. Brad Meyer



This year's International Summer Consumer Electronics Show gave us a peek at products that will carry us into 1988. Video stole the show, with Super VHS leading the technological march and CD-Video fronting the audio-video parade. Unlike this past January's show, DAT machines were openly displayed, and Marantz boldly went where no company has gone before: It announced plans to sell its deck (similar to the one on our cover) later this fall, which would probably be before a decision is reached on the proposed CBS Copy Code system. Our correspondents Robert Long and E. Brad Meyer report on this show's treasure chest of new products. Christopher J. Esse

BASIC ELECTRONICS

The grabbers among the most recent audio electronics aren't individual models so much as whole lines. It's noteworthy when a company we tend to think of as a specialist recasts itself into a general practitioner of the electronics arts. The most spectacular news of this sort comes from DBX, which has been moving from professional companding equipment (on which its reputation originally was based) to noise reduction for consumer decks and, more recently, the Soundfield series of loudspeakers. Now it plans to offer a complete line of high-performance separates.

The new line includes the obvious three basic elements: a preamplifier, a power amplifier, and a tuner. However, none is a routine also-ran. The CX-1 preamp (\$1,500) has nine inputs, including options for use with three tape decks, two of which can be VCRs. Luxury touches abound: gold-plated inputs, multigang master level control (plus subsidiary balance and input controls) so that all outputs (a total of five) can be adjusted simultaneously, and a "mode" control (first seen on the Apt Holman preamp) that can be adjusted continuously from mono (L+R in both channels) through normal stereo to exaggerated stereo (full L-R in the left, full R-L in the right).

A built-in multimode ambience processor offers full Dolby Surround decoding—

that is, the usual front and back channels plus the optional center-front channel that is often omitted, to the dismay of those who know what it can do for well-produced movie soundtracks. The processor also incorporates Dolby Surround Pro Logic (executed with DBX parts and technology) to maximize subjective separation. Circuitry that assesses signal values for this purpose works on the rms level-sensing technique fundamental to DBX noise reduction. Delay lines in the ambience modes employ delta modulation, which can generate significantly less noise than a conventional digital delay line of equivalent cost.

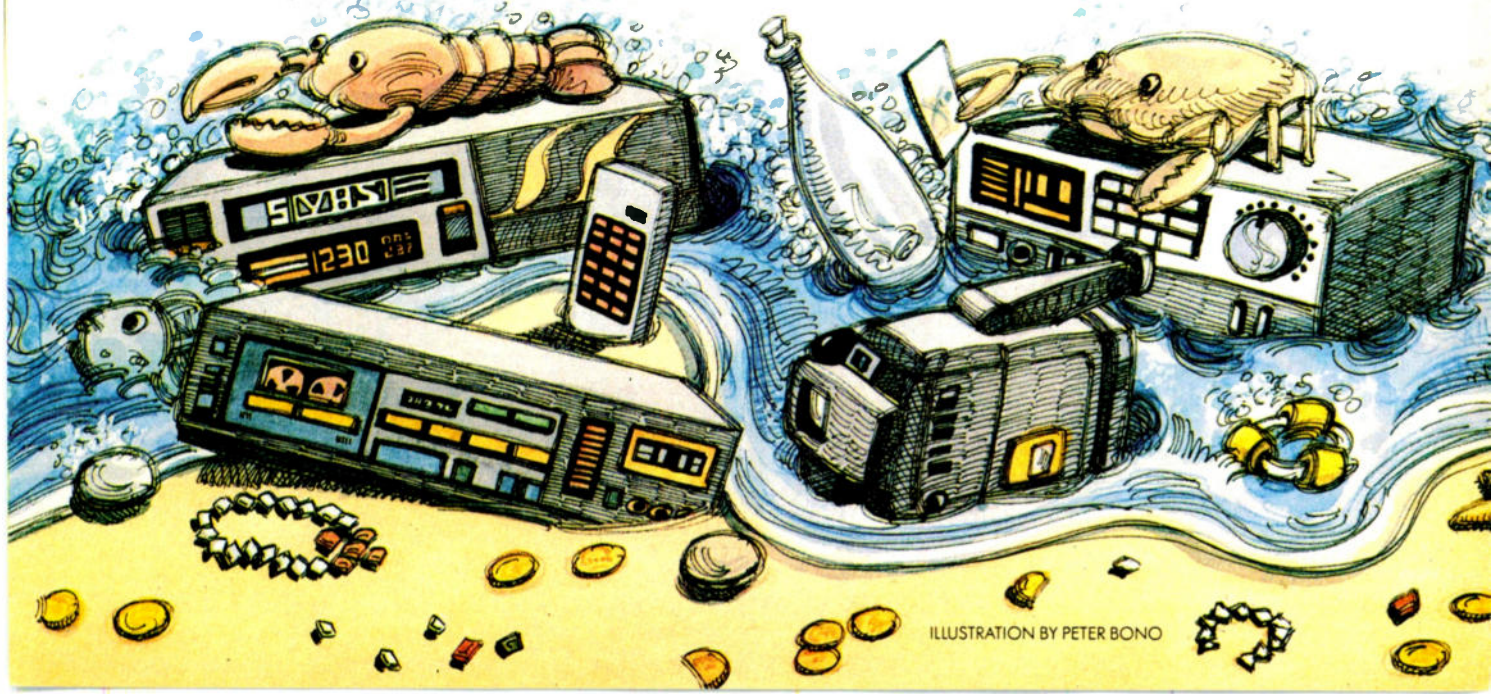
Rated on a per-channel basis—as are all the amplifiers in this roundup—the two-channel ("strapped") output of the \$2,500 BX-1 power amplifier is 400 watts (26 dBW) into 8 ohms or 650 watts (28.1 dBW) into 4 ohms. For four-channel operation, the ratings are 100 and 200 watts (20 and 23 dBW), respectively. For satellite-cum-subwoofer setups, you can unstrap one amplifier pair to drive the satellites and feed a mono low-pass signal through the strapped pair to drive the subwoofer with maximum power. High damping factor (extremely low output impedance) over a wide frequency band is credited with keeping the amp exceptionally insensitive to variations in speaker impedance and reactance.

That the TX-1 AM/FM tuner (\$600)

includes Schotz noise reduction (an ultrasophisticated automatic high-blend circuit that optimizes listening quality under favorable reception conditions) says almost all you need to know about its FM performance. (Larry Schotz is also responsible for the ingenious design of Recoton's F.R.E.D. MTS adapters, among other things.) A striking feature is the automatic IF (intermediate frequency) bandwidth switching that responds to reception conditions and has a manual override. Also significant is the relatively broadband (to beyond 5 kHz) AM reception—the first I'm aware of to match the new NRSC broadcast standard.

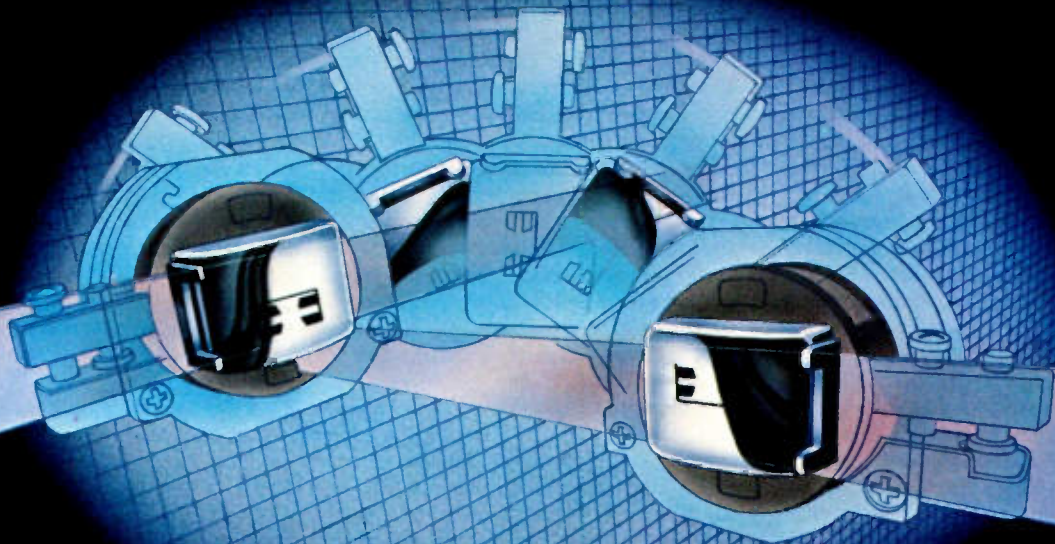
ADC—a sort of little brother to DBX in that both are part of the BSR group—has introduced an electronics line that comes on very much like a scaled-down version of the DBX models. Actually, it's a reintroduction of electronics, since ADC offered moderately priced basics about a quarter century ago. But that's ancient history. ADC's audio-video Dolby Surround preamp is the \$599 C-200; its 2/3/4-channel power amp (90 watts, or 19.5 dBW, unbridged; 260 watts, or 24.1 dBW, bridged, into 8 ohms) is the \$999 B-200; the Schotz AM/FM tuner is the \$399 T-200.

Soundstream, which rapidly established a place for itself in car stereo, will be introducing a home line this fall. The same three component categories are covered in



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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.



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51 MILLION UNITS...34 YEARS EXPERIENCE

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its initial entries. (A cassette deck and a CD player are expected later.) An R-1 programmable wireless remote control, which Soundstream says can handle as many as 11 components of virtually any remote-controllable brand, is included with the \$1,250 C-1 dual-mono preamp. To assist the remote control, the rotary volume knob is motorized, with precision resistor arrays to ensure accurate inter-channel tracking. Two audio output pairs and two video outputs prepare the way for a multiroom control system now under development.

The T-1 AM/FM tuner (\$450) can be controlled from the R-1 via the C-1 and a back-panel link. The T-1's manual tuning control is a knob whose flywheel action lends a tactile sense to the process, despite the digital innards and presets (eight for each band) of the design. The DA-1 power amp (\$795) also takes a dual-mono approach, with separate circuit boards for each channel to minimize the opportunities for crosstalk. Output is rated at 200 watts (23 dBW), and the circuitry is designed to tolerate low load impedances without the need for current limiting—a design approach favored among many of the new high-end (and even, if you'll pardon the expression, middle-end) models.

Trickling down from the high end are the Tandberg 3030 Series components, which seek to bring the brand into somewhat lower price brackets without sacrificing quality. The new separates are the TPT-3031A programmable tuner (\$895), the TCA-3038A preamp (\$995), and the TPA-3036A power amp (\$1,095), rated at 100 watts (20 dBW) with 30 amps of available current. Put them all together, more or less, and they spell the TR-3080 receiver (\$1,995), rated at 80 watts (19 dBW) and 25 amps.

Distribution of Tandberg products in America was recently taken over by the Ortofon/Dual organization. Dual also sells electronics and has added two Audio-ophile Concept Series integrated amps: the PA-5060 (\$380), rated at 60 watts (17.8 dBW), and the PA-5030 (\$280), at 30 watts (14.8 dBW). Both are high-current models with two video inputs (one with stereo audio, one with mono) and two-way audio tape dubbing. Not only are the concept and price range of these products radically different from Tandberg's, but the latter will continue to be sold only by the relatively restricted roster of Tandberg dealers.

Among several additions to the ADS Atelier Series, I was particularly drawn to

one detail of the R-4 receiver (\$1,100): a five-event recording timer with a daily repeat feature for use with decks that have a timer/record function. Those of us who are spoiled by the time-shift options in our VCRs find it difficult to understand why the idea has taken so little hold in audio. When the feature shows up in a classy receiver like this one, it's good news. A total of 25 presets remember both the frequency and the band (AM or FM) of the programmed stations. The power section is rated at 65 watts (18.1 dBW). For more power and more sophisticated audio design, ADS has added the PA-4 power amp



DBX CX-1 PREAMPLIFIER

(150 watts, or 21.8 dBW, bridgeable with a second PA-4 for even higher per-channel power) and the CC-4 preamp, at about \$1,000 each.

Perreux, the prolific New Zealand maker of high-performance separates, has added two power amps. The "little" model, the PMF-2350, delivers more power than did the PMF-1850 for the same \$1,895 price. It is rated at 200 watts (23 dBW) but can be run in pure Class A mode at 20 watts (13 dBW). Heavier copper in the circuit boards and wiring, which has been reduced in length, is among the measures credited with improving definition and dynamic range. Lineage (Saul Marantz's new company, which is just getting out its first products, announced last January) may have come up with the classic characterization of this sort of gear: "investment-grade audio."

Also designed with that in mind is the Yamaha Limited Centennial Edition Series: CX-10000 remote-control preamp (\$7,500), MX-10000 power amp (\$7,000), and HX-10000 phono equalizer-preamp (\$2,500)—as well as a CD player. The look and feel of these components are truly impressive, as are the specs. The preamp includes 18-bit digital processing for equalization and sound-field synthesis, similar to that in the DSP-1. The amp—all 94 pounds of it—uses a push-pull MOSFET Class A output rated at 250 watts (24 dBW), with the equivalent of 1.2 kilowatts (30.8 dBW) dynamic power into 1 ohm.

I must warn you that some major manufacturers seem determined to overwhelm you this fall by sheer numbers of new en-

tries. In addition to the Centennial Series, Yamaha has five receivers, ranging from 37 watts (15.7 dBW) at \$269 to 125 watts (21 dBW) at \$949; two integrated amps, 110 watts (20.4 dBW) at \$519 and 130 watts (21.1 dBW) at \$649; a remote-control preamp/surround-processor/four-channel-amp, 100 watts (20 dBW) front and 20 watts (13 dBW) back for \$429; and an AM/FM tuner for \$379.

Carver has added the AVR-100 receiver (about \$1,200), with four inputs and three outputs for video (including switching for both dubbing and antenna/cable RF routing) in addition to the audio facilities. These include Carver's Sonic Holography generator in the preamp section, a back-channel surround processor with its own 50-watt (17-dBW) amp, and a 150-watt (21.8-dBW) main amp. The 20-function wireless remote also controls the Carver CD player.

This sort of product—a relatively high-power, remotely controlled audio-video receiver with some sort of special signal processing aboard (most often, Dolby Surround)—is the flagship of line after line this season. All four of Vector Research's new receivers meet that definition or come close. At Technics, the emphasis is on graphic equalization, rather than surround sound, but the idea is otherwise comparable.

Kenwood's five receivers range from \$205 (40 watts, 16 dBW) to \$650 (125 watts, 21 dBW—plus a separate low-power back-channel amp). This last model, the KR-V126R, is equipped with a Dolby Surround processor and a seven-band graphic equalizer. And there are ten more new models in the line, covering all basic electronics component types. Similarly, Onkyo is offering six new receivers (including remote/video models), three integrated amps, and two tuners. The top receiver, the TX-SV7 (about \$1,000), includes a VHF MTS stereo TV tuner, Dolby Surround, 75 watts (18.8 dBW) in front and 25 watts (14 dBW) in back, and Onkyo's RC-AV1M programmable wireless remote control, previously announced ("Currents," July).

Sony's most comparable model is the STR-AV950 (\$750), with 115 watts (20.6 dBW). As in all of Sony's six receivers announced this summer, the amplifier section here is designed for high current capacity and low output impedance; like most of them, it has separate power supplies for the digital control circuitry and for the analog audio circuits. It includes a surround processor and simulcast switch-

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ing capability. There are also six additions to the premium ES separates series. Of particular interest for audio-video systems is the S-video input on the TA-E77ESD preamp (\$1,100), which accepts the separated luminance and chrominance (brightness and color information) output from high-resolution sources like S-VHS and ED Beta for best possible reproduction through a connected monitor. A programmable remote is included. The "D" in the preamp's model name denotes the built-in digital-to-analog (D/A) converters, which can decode the digital output from CD players (at 44.1 kHz), DAT players (at 48 kHz), or, at 32 kHz, from Direct Broadcast from Satellite (DBS) receivers, a system not yet available in the U.S. Both the TA-E77ESD and the

(made using a Denon PCM recorder) by introducing the DAP-5500 "digital" pre-amplifier, expected to sell for less than \$2,000. As in other products of this genre, the Denon's D/A converters work at one of the three standard, automatically chosen sampling rates. Harman Kardon, which also has new tuners, has incorporated aspects of Citation amplifier design into a whole line of integrations. Pioneer will be adding a tuner and an integrated amp to its premium Elite line. Nikko Audio, which has been fighting its way back from near eclipse following the death of its founder, uses the term "load elasticity" to characterize the Alpha-Series' handling of dynamic-range demands. Also resurrected from Nikko's former line of top separates are the Gamma-80 and -60 tuners (\$450 and \$300, respectively).

Marantz has introduced a premium 94 Series to accompany its announced DAT player. Of particular interest in that respect is the CDA-94 digital-to-analog converter (\$1,500 in black, \$1,600 in a subtly pinkish-gold anodizing), which accepts the optical digital output from the company's new CD-94 CD player. It automatically selects 32, 44.1, or 48 kHz as the sampling rate, depending on the source, and it's fitted with an absolute-phase (polarity) switch. The PM-94 integrated amp (\$2,000 or \$2,100, depending on finish) operates Class A up to 35 watts (15.4 dBW) but is rated to 140 watts (21.5 dBW).

The most impressive of NAD's introductions is the 7600 remote-control receiver (\$1,498), billed as "the world's most powerful, most sensitive, and most flexible receiver" (and possibly the longest-awaited—we originally reported on it a year ago). Rated at 150 watts (21.7 dBW) for continuous output, its Power Envelope design gives it the music-reproducing capability of a conventional 500-watt (27 dBW) design, according to NAD. The amplifier section actually is a reincarnation of the NAD 2600; the preamp comes from the NAD 1300. The tuner section, though evidently not lifted wholesale from an existing successful NAD product, is typical of recent NAD designs. It does not incorporate FMX as originally intended, however, since that system appears to be languishing with unsolved technical and marketing problems.

Finally, Sansui has added a moderate-power integrated amplifier and a second tuner to its Vintage line. The AU-X301 (\$440) is rated at 65 watts (18.1 dBW) with dynamic power of 110 watts (20.4

dBW) into 8 ohms. The matching tuner is the TU-X301 (\$280). Reflecting its renewed emphasis on high-end componentry, Sansui has changed its company logo as well.

Despite the number of new receivers and integrated amps, and the rush to discover the ideal approach for the integration of video features into audio component designs, the most noticeable trend at this summer's show is toward very high-end perfectionist separates—from the broad-line companies as well as the specialists. A variety of economic and technological reasons are involved. Some efforts are almost certainly spurred by corporate vanity or promotional objectives, more than to satisfy a perceived audiophile need. But looking at the long term, audio



HARMAN KARDON'S PM-655Xi AMP

matching 200-watt (23-dBW) power amp, the \$1,100 TA-N77ES, are built on Sony's nonresonant G-chassis.

Luxman's five electronics additions repeat the pattern set by other companies—modified, naturally, by Luxman's own characteristic approach to electrical and mechanical design. Its premier receiver, the \$1,200 R-117 (150 watts, 21.8 dBW), is the most striking. Also of interest is a new power amp from NEC, a company that has recently taken large strides in the audio component market. The M-50 mono amplifier (\$375; 50 watts, or 17 dBW, into 8 ohms) offers exceptional bandpass adjustments (including direct) and a chassis design said to be vibration-free—a factor about which we're hearing more and more from many companies.

Among the high-performance separates from the broad-line companies, Denon has what it calls a supertuner in the AM/FM TU-800 (\$475) and a dual-mono power amp, the POA-6600 (price to be announced when it is introduced later this year), rated at 250 watts (24 dBW) but designed for added headroom and stability into very low-impedance loads. Denon also is marking the 15th anniversary of the world's first commercial digital recording



ONKYO TX-SV7 AUDIO-VIDEO RECEIVER

itself stands to be the beneficiary of the thrust, whatever the motivation. R.L.

CASSETTE DECKS

The banner over the booth was amusing: "Parasound: the Rolls-Royce of Entry-Level Audio." Audio companies aren't often that willing to let their hair down, particularly when they're showing the first home cassette deck I know of (other than NAD's own) to use the play-trim feature developed jointly by NAD and Dolby Laboratories. Briefly, play-trim seeks to compensate in playback for poor bias adjustment or azimuth match before these factors have a chance to cause mistracking in the Dolby decoder. The Parasound CD-400 (\$335) also offers Dolby C noise reduction and HX Pro headroom extension—and, like every other model mentioned in this report, the nearly obligatory Dolby B.

In sheer quantity, the Teac additions are astonishing. Two models feature individual adjustments in each channel for both bias and level (tape sensitivity), with calibration-tone assistance from the deck. One is the V-970X (\$699), a unidirectional, three-head, three-motor model with

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Dolby C, Dolby HX Pro, and DBX. Its autoreverse counterpart is the R-919X, to which a price has not yet been assigned. Bias and level adjustments also are included (although not for individual channels) in the bidirectional R-616X, which also has Dolby C, HX Pro, DBX, and no set price. Another addition is the remote-controlled AD-4 (\$599), which combines an autoreverse deck with a CD player.

Nakamichi is replacing the BX Series with the similar (and comparably priced) models CR-1A, -2A, -3A, and -4A. Apparently, the changes are cosmetic only—Nakamichi simply is unifying its line by redoing the decks to conform to the design of its electronics, which have come on the market since the BX Series appeared.

The Sony TC-K700ES (\$700) offers tone-assisted bias and sensitivity adjustments, Dolby C, three heads, and closed-loop dual-capstan drive. The chassis is divided into three parts (control functions, audio circuitry, and transport/power supply) to help control vibration and resonance. Dual-mono layout and separate recording and playback boards minimize crosstalk. The heads are built of noncrystalline laminations; internal wiring uses large-crystal oxygen-free wiring.

Yamaha's KX-1200U (\$699) offers three heads, tone-assisted bias tuning, Dolby C, HX Pro, and DBX, plus a wireless remote. The three-head Luxman K-112 (\$500) has Dolby C and HX Pro, a bias trim, and oxygen-free copper internal wiring; it can be controlled via a Luxman system remote. Of Nikko's two entries, the more impressive is the D-100III (\$699), with three heads, three motors, Dolby C and DBX, automatic bias/recording-EQ/sensitivity settings, plus a manual bias adjustment and a number of automated convenience features. The three-head Technics RS-B905 (\$600) has a closed-loop dual-capstan drive, Dolby C, HX Pro, and DBX.

Kenwood is notable for having introduced six moderately priced models. The top one (KX-660HX, \$300) offers HX Pro and Dolby C; the latter also appears in several other Kenwood units. Denon, too, will be introducing a midprice model (DR-M10HX, \$275) with Dolby C, HX Pro, and the company's Non-Slip Reel Drive to promote consistent tape tension.

If you're looking for a dual-transport dubbing deck, there are plenty to choose from. Three of the most elaborate come from Pioneer. The CT-1380WR (\$500) has quick autoreverse in both drives for recording and playback, high-speed dub-

bing, sequential (three hours with C-90 tapes) or simultaneous recording, random song selection, Dolby C, and a wireless remote control. Additional models (and options) are available from Teac, Akai, Kenwood, Sansui, Onkyo, NEC, Technics, Sherwood, Nikko, and probably more. Perhaps the manufacturers consider this the last fling before the copy-guardists turn their guns on analog dubbing decks.

R.L.

DAT UPDATE

As the show began, the news about the digital audio tape (DAT) recorder was that there was no news, nor would there be any. The possibility that Congress would require an analog copy-prevention chip in every deck had indefinitely stalled DAT's American introduction. No one can make copy-prohibiting machines because the chips don't yet exist, and no one can evaluate the effect of the notch filter because its designers (CBS) won't release samples or tell anyone how to build them. [See our July issue for an in-depth analysis of CBS's proposed anticopy chip—Ed.] Eight manufacturers have introduced DAT decks in Japan, but at the start of the show, the new medium seemed to have no immediate prospects here.

On Saturday morning, May 30, came the news that the European Economic Community would probably decide against requiring the anticopy chip, because it feels that the accompanying notch filter audibly degrades the music—a criterion that seems decidedly odd in the context of our government's deliberations, where the arguments have mainly to do with politics and the balance of trade.

Still, everyone seemed to agree that the situation was a gigantic logjam that a single company could dynamite apart at any moment. Late that same day, Marantz announced that it isn't going to wait for Congress or anyone else and is planning to sell DAT machines here in early fall for around \$1,300. Company president James Twerdahl released a statement calling the copying controversy "a foolish waste of time for both hardware and software producers." In support of this statement, he noted that the record business seemed to have benefited tremendously from the existence of portable cassette players, a medium that relies heavily on home taping.

Later clarification revealed that the projected \$1,300 price was probably too low, and all such plans are, of course, subject to change. Nevertheless, there were

signs that the situation is beginning to look better for those of us who would rather let the marketplace decide the fate of the new format. Meanwhile, the first few DAT samples in the U.S. are making their way into the hands of industry professionals and audio writers; attentive readers will soon know what they are missing. *E.B.M.*

CD PLAYERS

Disc prices, the engine that drives the CD format, have not fallen as much as was hoped. Manufacturing costs are starting to drop as more plants compete for business, but many popular artists who agreed to modest royalties in order to help the new format take off are asking for a bigger cut now that it seems safely airborne. Still, many rereleases of old material are expected to stay below the magic \$10 point, and some have already been advertised for \$7.95. And the days of long waits for pressing time seem over: Many labels are now releasing new material on LP, cassette, and CD simultaneously.

Player design continues to evolve, albeit more slowly. Everyone seems to be using some form of so-called oversampling (either two- or four-times) and digital filtering. Yamaha's new scheme to reduce low-level distortion is a quasi-18-bit decoding system in which signals more than 12 dB below the maximum level are shifted two bits upward, keeping the signal out of the presumably less linear bottom range



DENON DCD-1500II CD PLAYER

of the decoder. (A complementary 12 dB downward shift takes place in the analog domain to maintain the correct output level.) This "Hi-bit" circuit is available in four players, from the \$449 CDX-700U to the new \$2,500 CDX-5000, which boasts a 20-bit digital volume control and a maximum 0.7-second access time.

Denon and NAD address the low-level signal problem by individually hand-tuning the most significant bit (MSB) in every player's decoder for minimum distortion. This feature is available in three Denon players: the \$299 DCD-600, the \$380 DCD-800, and the \$675 DCD-1500II. The new \$800 NAD 5300 also has 16-by-4 decoding (16 bits, four-times oversampling) with dual converters, a motorized

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remote volume control, a digital output, and a two-stage error indicator for checking disc quality or cleanliness, as well as switchable stereo-image enhancement and compression circuits.

Despite the ongoing controversy over the taping of CDs, manufacturers continue to make the process easier. One common method is the automatic insertion of a four-second pause between cuts to enable the tape deck's cueing circuit to recognize the break. Players like the new Technics series (the SLP-120, -220, -320, and -420, from \$249 up) will display the total programmed time to reveal whether



TOSHIBA XR-9437 PORTABLE CD/TUNER

a sequence of cuts will fit on your tape. The NEC CD-810 (\$629) displays the number of tracks that will fit on a tape of known length; it also sports a feature that first appeared on several high-end players—a phase-inverter switch that changes the polarity of both channels. The Toshiba XR-9037 (\$450) has a feature called “digital peak search” that helps you find the highest audio level and adjust your recorder accordingly. The Pioneer PD-7050 (\$425) will even fade songs out and in automatically at preset points for more flexible programmed dubbing. The PD-7050 also contains many of the standard features characteristic of modern high-price players: a special vibration-reducing chassis; four separate power supplies for isolation of analog, digital, and display circuits; twin D/A converters; and a built-in magnetically clamped disc stabilizer.

CD players are increasingly being combined with other equipment. At the Winter CES, we saw a CD player in a table radio; this summer's hybrid makes a bit more sense, though it was accompanied by the ugliest new noun I've heard in a while. The \$900 Sharp SA-CD800 CDver (pronounced “see-deever”) combines a CD changer (containing separate single- and multi-play drawers) and a 100-watt receiver with seven-band EQ and analyzer in one

chassis. The Bang & Olufsen Beocenter 9000 (\$2,995)—a CD player/receiver/cassette deck combination—measures 4½ inches high, 13 inches deep, and 30 inches wide and features a built-in timer for programmed operation and remote control of all functions. Toshiba has streamlined the portable player by trimming off the corners: Its XR-9437 (\$430) has a round case with one small appendage containing the controls and display.

High-end models from Japanese companies tend to be massively constructed, like the Technics SL-P1000 (\$1,000) with its big isolation base and disco-type cueing wheel or the 56-pound, \$3,000 Yamaha CDX-10000 (part of its Limited Centennial Edition Series). Domestic companies that modify existing transports tend to promote special analog circuitry and parts. American Audio Laboratories is a typical example. The hand-selected components in its \$1,199 P-15 Laboratory Reference CD player are mounted on a double-sided gold circuit board with AAL's own Super Solder; the entire player rests on Mod Squad Tip Toes (usually used to couple loudspeakers to the floor). Each unit is burned in for 100 hours and comes with Straight Wire interconnects permanently attached.

However, some modifiers are attempting to broaden their markets. California Audio Labs, whose vacuum-tube analog circuitry has helped its players gain admittance to high-end demonstration rooms where conventional CD players fear to tread, introduced the Tempest II, its first with a new circuit design—all solid-state. The \$895 price is also lower than those of previous models.

E. B. M.

TURNTABLES & CARTRIDGES

Thorens—the granddaddy of all companies now building music-reproduction equipment, if one considers the music boxes that preceded its turntables—plans to celebrate this year's centenary of Emil Berliner's flat-disc Gram-o-phon with a limited-edition turntable that will play virtually any record ever manufactured. It will be based on the TD-520, whose TP-16 Mk. VL tonearm is long enough to accept 16-inch broadcast transcriptions, but with a wide adjustment range for each of its three speeds: 33, 45, and 78 rpm. This will take it to over 90 rpm—the speed of some important early Pathé hill-and-dale discs, for instance—which is beyond the range of most adjustable multispeed models.

Collectors, from whom HIGH FIDELI-

TY has had a steady trickle of complaints about the difficulty of finding modern turntables that will play historic records, will also revel in the three-speed TD-535. It offers a wide (± 15 percent) speed-adjustment range as well, though not the extra-long arm of the limited-edition model. The 535 is expected in October, at a price of around \$1,000.

Like the claim from Sota Industries at last winter's CES that it had solved all the major technical problems and in effect “finished” the job of turntable design, Thorens's announcement of the TD-520 inevitably carries a note of bittersweet finality. Nevertheless, a few design refinements continue to appear in ordinary record players.

Ariston offered a new Q Deck turntable with visco-elastic laminations in the base and electronically switchable speeds. The \$260 price includes the tonearm; for \$299, the unit comes with an Ortofon OM-10 cartridge.

At the Souther Audio booth, we saw an updated version of the Clearaudio Veritas cartridge and accompanying Harmony preamplifier. The cartridge, which has generating coils mounted on the hollow boron stylus cantilever both above and below the pivot point, is extremely compact and weighs only 4.4 grams. As a counterweight, you can use Clearaudio designer Peter Suchy's 7-gram RIAA preamp, ¾ inches in its largest dimension, that fits between cartridge and arm, thus reducing the cartridge output leads to less than an inch in length. An additional control box and 20-dB gain stage has a 24-position attenuator for volume control and an extra high-level input. Price is \$2,000, plus \$850 for the Souther Triquartz SLT arm.

Ortofon, which announced its top-line MC-3000 cartridge at the Winter CES, has begun shipping the unit. The price has since almost doubled, to \$1,500; the T-3000 transformer is an additional \$1,250. Still, the cartridge has high enough output that alternative step-up devices can be used, and it comes in an elegant box—a Lucite replica of the unit's Fritz Gyger stylus. The box is packed inside a tiny straw-filled wooden crate, complete with a miniature crowbar “for easy opening.”

The record player that made such big news a year ago, the Finial Laser Turntable, was nowhere to be seen at the show. However, rumors of its death proved greatly exaggerated. The laboratory prototype has evolved into a modular, mass-producible system that is expected to be available in stores this fall. Price has not

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been announced but will reportedly be higher than the original target of \$2,500. Added features include an LCD display that shows the number of tracks on the LP (and gives a visual indication of how far across the surface the laser has progressed) as well as elapsed and remaining times for either the current band or the entire side.

E.B.M.

SIGNAL PROCESSORS

Of all signal processing, Dolby Surround is currently at stage center—if anything called “surround” can be in the center. It’s ironic that multichannel sound—hailed as the next wave in audio a decade ago and since deplored as one of audio’s greatest commercial fiascoes—has reemerged as a major audio issue, thanks almost exclusively to the intervention of video. Dolby Laboratories, which invented the Dolby Stereo matrixing recorded onto so many



SHURE HTS-5200 SURROUND PROCESSOR

film soundtracks, supplies the name (Dolby Surround) under which the home matrix decoding is known. New from the Labs is Dolby Surround Pro Logic, a separation-enhancement circuit that is being made available to all Dolby licensees. Among the companies that have adopted the Pro Logic approach is DBX (see “Basic Electronics”), which announced its preamp/processor the day after Dolby’s announcement of the circuit itself. Others will doubtless follow.

Meanwhile, there are many Dolby Surround decoders with proprietary logic and even more that are “passive” (Dolby Lab’s term for circuits that lack any steering logic). Acra-Vector is Shure’s term for its active logic element, included in the original HTS-5000 (reviewed last September) and the new second-generation HTS-5200 (\$1,000). Among the improvements in the latter: increased headroom in the input circuitry and reduced noise in the ambi-

ence delay circuits to improve dynamic range all around, and a synthesizer that is said to yield improved surround effects for nonencoded material. If you want to conceal the 5200, the unit’s wireless remote control can be used with an optional extender.

Also supplied with a wireless remote (as are most of the top-line models) is the Kenwood SS-96 (\$350), which includes an internal 5-watt (7-dBW) stereo amp to drive the back speakers. It has two synthesis modes, with variable delay, in addition to Dolby Surround. Memorex, a brand name new to signal processing but one that Memtek says should become more prominent there, has the simple and affordable (\$130) Memorex Dolby Surround Decoder with Amplifier (whew!). The last part of that title refers to the 15 watts (11.8 dBW) available for the back speakers.

Altogether on a different plane is the Aphex ESP-7000 (\$995), which is expected on the market this fall. An effective separation of as much as 50 dB between adjacent channels is claimed. The ESP-7000 doesn’t use the term Dolby Surround, but says its cinema mode is compatible with it. The alternative is a music mode, intended primarily for audio-only inputs. No delay or reverb is used; the design relies on relatively elaborate matrixing for the surround outputs. There are six separate outputs (for back- and front-center channels in addition to the usual corner speakers) to promote unequivocal imaging. In addition, manual adjustment of the front-image separation can be achieved via the supplied wireless remote.

After a brief break last winter, graphic equalizers are back in force. ADC, in addition to its all-new electronics line (see “Basic Electronics”), has added two equalizers with built-in real-time analyzers. The 300SL (\$240) controls ten bands separately for each channel. Tape connections for two decks are included with pre/post EQ switching and two-way dubbing. The T-200 (\$399) is a 12-band model with five EQ memories and tape features like those of the 300SL. (The ADC SS-525X is tested in this issue.)

Yamaha has added three equalizers, two of which—the EQ-1100U (\$599) and EQ-500U (\$349)—include a pink-noise generator and microphone for speaker equalization (the former has an automatic function for this). The EQ-32 (\$299) has the same features as the EQ-500U except for the generator and mike. Nikko also has an EQ-plus-display model, the EQ-540 (\$199). If you want just a straight graphic

equalizer, Kenwood has added three models (\$100–240), and Onkyo has added two (\$135 and \$210).

For TV audio, Memtek has an MTS stereo decoder in its new electronics line. And if you’re after picture processing, Teac has added the AV-F3, which digitizes the picture for still, strobe, or slow-motion effects. Prices are yet to be determined for these products.

The most comprehensive line of remote-control processors for video sources, however, is from Multivision. For the present, the Multivision 3.1 (reviewed in our March issue) is the flagship model. Others now available are the 1.1DVC (\$329), which combines versatile picture-in-picture functions with independent audio and video switching. The 2.1 (\$299) concerns itself with the picture processing alone. Still in the works is the 4.1E (price not yet announced) that combines all of the above with two 139-channel cable-compatible tuners and adds Faroudja image processing—the technology that first garnered attention when it was adopted by Kloss for incorporation in its latest projection TV systems. With this first announced add-on application of Faroudja processing, Multivision appears to have nothing less in mind than the conversion of millions of ho-hum TVs to state-of-the-art monitors. Ah, brave new world! *R.L.*

LOUDSPEAKERS

One of the primary requirements for good stereo imaging is that the sound should reach the listener directly from the speaker’s drivers without being colored or muddied by extraneous reflections from nearby surfaces or by diffractions from sharp corners or edges on the cabinet. Almost all the new speakers at this CES embodied design approaches intended to minimize such problems.

The least expensive path to good imaging is to mount the drivers in as small a cabinet as possible and then put the speaker on a stand (away from the walls and floor) at ear level. Small cabinets also blend in well with other furnishings and fit conveniently into video systems, either beside the TV set or as surround speakers. One small speaker whose design provides for a variety of environments is the new Altec Lansing Model 55 (\$250; all prices given here are per pair unless noted otherwise). Its largest dimension is less than 10 inches, and the cabinet, grilles, driver materials, gaskets, and input terminals are made to withstand outdoor use. To make ▶

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Columbia Audio-Video
(815) 364-4886

Stereo Systems
(815) 741-1350

The Shoppe
(815) 939-4014

INDIANA

Audio Radio Specialist
(219) 255-6434

Classic Stereo
(219) 433-0553

Classic Stereo
(219) 433-0553

Classic Stereo
(617) 232-5264

Classic Stereo
(317) 662-9344

Ovalton Audio
(317) 849-7729

Tom Doherty's Audio
(317) 848-7503

Alan Audio
(812) 332-2192

Audio Connection
(812) 232-1663

Risley Electronics
(812) 479-8787

Risley Electronics
(812) 886-9543

IOWA

Spencer Sound Syst
(319) 354-1448

Wright's Sight & Sound
(515) 437-4814

Phantz Electronics
(712) 252-4507

KANSAS

Audio Visions
(316) 681-1751

Hayes Audio Elect
(316) 792-8139

Hayes Sight & Sound
(316) 662-2791

Audio Electronics
(913) 381-8585

Nelson's
(913) 267-2200

KENTUCKY

Audio Video By Design
(502) 425-3333

Risley Electronics
(502) 665-2264

Risley Electronics
(502) 821-5620

Risley Electronics
(502) 443-4444

Audio Connection
(606) 432-8132

Ovalton Audio
(606) 278-0335

Sight in Sound
(606) 371-4036

Sounds Around Town
(606) 528-0566

Sounds Around Town
(606) 364-6487

LOUISIANA

J's Sound Center
(318) 387-6044

Stereo & Record Cent
(318) 361-2666

Stereo & Record Cent
(318) 365-6223

MARYLAND

Discoring Ear
(301) 494-9990

Myer-Emco
(301) 469-2000

Sound Studio
(301) 546-3181

MASSACHUSETTS

Taylor's Sound
(413) 499-1420

The Music Store
(413) 774-2836

Audio Video Environ
(617) 864-8001

Electric Gramophone
(617) 443-3703

Encore Audio
(617) 236-4646

High Fidelity House
(617) 799-9737

Nantucket Sound
(617) 231-3161

Nantucket Sound
(617) 532-5777

Nantucket Sound
(617) 734-0700

Nantucket Sound
(617) 771-4434

Nantucket Sound
(617) 848-6622

Nantucket Sound
(617) 826-2344

Sound II
(617) 996-5454

The Music Box
(617) 235-5100

The Music Forum
(617) 343-9393

The Music Forum
(617) 632-0660

The Music Forum
(617) 534-4431

Trolley Stereo
(617) 484-7847

Audio Concepts Inc
(519) 699-8819

MICHIGAN

Stereo Center
(313) 239-9474

Video Alternative
(313) 549-3100

Classic Stereo
(616) 957-2130

Classic Stereo
(616) 381-6049

Langlois Stores
(616) 733-2528

MINNESOTA

Team Electronics #163
(218) 739-3674

Amalgamated Audio
(507) 286-1328

Amalgamated Audio
(507) 452-1965

Midwest Satellite A & V
(507) 238-2233

Audio By Design
(612) 475-1443

Entertainment Designs
(612) 339-8616

Firs Tech
(612) 377-9840

Firs Tech
(612) 378-1185

Top Tech
(612) 780-9707

Too Tech
(612) 920-4817

Top Tech
(612) 544-7412

Top Tech
(612) 636-5147

Top Tech
(612) 451-1765

MISSISSIPPI

Audio Advantage
(601) 326-4500

Audio Advantage
(601) 841-2400

Automotive Audio
(601) 956-8158

Tile Sound Circuit
(601) 445-2377

Tile Sound Circuit
(601) 635-6033

MISSOURI

Hi Fi Fo Fum
(314) 647-3606

Wright's Sight & Sound
(314) 665-7208

MONTANA

Sonic Pro
(406) 449-4945

Sonic Pro
(406) 453-4364

NEVADA

Import Audio
(702) 731-2000

Import Audio
(702) 731-4918

NEW HAMPSHIRE

Audio Of New England
(603) 225-3313

Audio Of New England
(603) 524-1532

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them less conspicuous indoors, you can paint the external parts to match your room's decor.

The main problem with small loudspeakers is getting adequate bass extension and level, so the number of three-piece systems with separate woofer modules is increasing. (Since few of these have useful response below 40 Hz, we refuse to call the bass modules subwoofers.) The Bose AM-5, reviewed in our June issue, is a prime example of this trend. KLH has added a larger three-way system and a woofer module to its octagonal "universal-mount" series. The three-way is the 8830 (\$500); the new 12SW woofer modules (\$329 each) have 10-inch drivers and 12-inch passive radiators. Suriano Audio has a three-piece system, the S-5.5 (\$820 to \$870, depending on finish), that includes wooden stands for the satellites; it also introduced a smooth-sounding floor-standing three-way, the S-1.1 (\$1,195 to \$1,395).

two systems: the A2-1 (about \$800) and the A2-2 (\$1,200). The amplifier is the same for both, but each contains an individually tailored equalizer network that extends low-frequency response. The A2-2, which is about 6 by 8 by 4 inches, is capable of a maximum of 99 dB SPL at 1 meter at 60 Hz. Another Swedish import is the Ambria line, distributed by Parasound. Ambria's two systems, discussed in last month's "Currents," use tiny two-way satellites that can be mounted on walls, ceilings, or shelves with a variety of hardware, including a pole-stand clamp that makes the speaker resemble a lamp.

Tiny speakers help when you're trying to shoehorn a video surround system into a small room, but running wires to them remains a problem. Koss has come up with a novel approach based on its wireless-headphone technology. The Koss "Kordless" JCK/5000 (\$350) has a built-in battery-operated amplifier with volume and tone controls and an infrared receiver. A companion transmitter connects to the headphone output of a preamp (or other component) and beams the sound across the room to the speakers. The unit comes with a 12-volt AC charger to keep its batteries happy, but you can unplug it before the guests arrive.

Another "wireless" speaker introduced at the show must be plugged into a power outlet all the time because that's how the audio signals get to it. Designed by Larry Shotz for Recoton, the WW-100 has a built-in 12-watt amp that is fed power and audio signals through the wires that carry the house current. The audio is sent from a transmitter that connects to the headphone or line output in your main system and broadcasts through its own AC cord. This method is a high-quality, stereo version of the carrier-current FM intercoms sold for use in large houses. The WW-100 system should be available this November for about \$250. Two future versions are planned, one with a transmitter and amp but no speakers, another with a transmitter and a companion line-level output module (for simply passing signals on to an amp in another room).

Many car woofers in effect have huge enclosures because they're mounted in the rear deck, with their backs coupled to the trunk. You can do the same trick at home if you mount the speaker flush with the wall and use the space between the studs for the enclosure. Boston Acoustics has added two such systems to its wall-mounted line. The Model 705 White (\$90) is a single-cone speaker; the Model 350 (\$300)

is a two-way system with a 5/8-inch long-throw woofer and a 1-inch dome tweeter.

A second approach to good imaging is to use a tall, narrow cabinet—the so-called tower speaker. The tower can be thought of as a minispeaker whose stand has been converted to a woofer enclosure, with the attendant benefits in bass performance. B&W uses this approach, but it keeps the cabinets separate. The Matrix Mini-Tower places a new Matrix Mini system atop a stand containing a separate woofer module. The Minis by themselves are \$650; adding the woofer modules brings the total to \$1,650 for black, white, gray, or walnut, or \$1,950 in rosewood.

ADS has two new lines of speakers. The one that replaces its older towers is the Monitor Series, three three-way columns using fourth-order Linkwitz-Riley crossovers and drivers made of custom-engineered polymers. They are the M-10 (\$1,350), the M-12 (\$1,850), and the company's new flagship, the M-15 (\$2,750). ADS also debuted the CM series, three systems of more conventional shape that also have new polymer drivers, fourth-order crossovers, and a computer-aided design. They range from the two-way CM-5 (\$500) to the three-way CM-7 (\$1,350).

Acoustic Research announced two new tower speakers at the top of its TSW Series. The three-way TSW-810 and TSW-910 fight bass coloration with two woofers (10- and 12-inch, respectively), one on the front of the cabinet and the other on the back surface; the rear driver fills in the slight dip in response caused by the front driver's wall reflection. The vertical dispersion pattern of the two midrange drivers in each system is said to be improved by a slight staggering of their crossover frequencies; both models have titanium tweeters and acoustic blankets covering the front upper cabinet surface to minimize diffraction. The 810 costs \$1,700, while the 910 lists for \$2,000.

Altec Lansing's new tower speakers have carbon-fiber woofers. One of them, the 40-inch-high three-way Model 508, sells for \$1,000. The tower-shaped Bose 401 (\$599) directs its high frequencies in toward the listener, while the lower mid-range sounds are aimed outward to reflect off the side walls, thereby enhancing spaciousness.

DBX's latest Soundfield speaker, the SF-50 (expected to sell for less than \$2,000), is also tall and narrow. Its four-way design allows more precise tailoring of the radiation pattern and achieves the desired spatial effect with fewer drivers



MAGNEPAN MG-2.5R LOUDSPEAKER

A major demand for good small speakers comes from the video market, where surround-sound processing requires extra channels within rooms that may have little extra space. Sonic Research, the American distributors of the Swedish Audio Pro line, announced the Ace Plus line of amplifier/speaker combinations. There are

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than used in the company's previous designs. Each system contains three tweeters, one woofer, one midrange driver, and one upper-midrange driver. Claimed response is 34 Hz to 20 kHz, with a sensitivity of 91 dB at 1 meter with a 2.83-volt input.

Symdex, notable for its small, attractive-sounding, full-range systems, introduced a new two-way speaker, the Gamma (\$1,095), and a three-way, the Epsilon (\$1,795). Celestion has done a major redesign of its DL models, which now carry the Series II designation. And Infinity added the first bookshelf model to its Kappa line—the Reference Standard 6 Kappa three-way system (\$499).

Specialty audio companies continue to experiment with the small-system-plus-woofer idea as well. Dennessen Electrostatics showed the 9-R (\$1,650), with nine electrostatic elements in a vertical array atop a cabinet containing a Bextrene woofer. Sota Industries, the turntable maker, has taken the plunge into the speaker market with its Simile, a two-way vented system that sells for \$1,200 to \$1,500, depending on finish; a matching subwoofer costs an additional \$1,500.

High-end companies still seem to prefer a third approach to better imaging, namely the large, flat dipole radiator. Because big tweeters have poor dispersion, most manufacturers are using tall, narrow high-frequency drivers. Apogee, the first company to market a successful full-range all-ribbon system, showed its new Diva. Slightly shorter (73 instead of 80 inches) and considerably lighter (150 pounds per speaker instead of 300) than the original Full-Range model, the \$7,000 Diva is a three-element system that is said to be easier to drive than the Full-Range, achieving 115-dB levels at a distance of 4 meters with a single 100-watt stereo amplifier.

JSE, known previously for its "infinite-slope" crossovers, introduced a prototype of the Signature Line Source with a target price of \$7,000. Each cabinet contains four ribbon tweeters, four upper-midrange domes, four lower-midrange cones, and two 12-inch woofers.

A new company called Paredaks (pronounced "paradox") is offering a single-unit ribbon system with a built-in 100-Hz crossover; you pay \$5,950 and supply the woofers. Acoustat has a new, smaller Spectra model designed to achieve virtual curvature of the panels by spectral and temporal manipulation of the signal going to the outer elements. The Spectra 2 also has a switchable cone woofer in its base

that increases its output capabilities below 100 Hz. API is now making its dipole Mirage M-1 (\$3,000), heard in preproduction form at the last show. It uses conventional drivers, with a system response specially tailored to remain flat off-axis.

Infinity has a new planar lower-midrange driver that appears in three flat-panel systems. The IRS Delta (\$4,500) uses



KOSS JCK/5000 WIRELESS SPEAKERS

one of those drivers, plus one midrange panel, two tweeters, and one supertweeter on a baffle that narrows toward the top to fit the drivers. The bottom of the system is a box containing two 12-inch woofers. The IRS Gamma (\$5,500) adds servo control to the woofers, while the IRS Beta (\$10,000) has two of the new lower-midrange drivers at the bottom of the main panel and four woofers (also with servo control) in a separate cabinet.

Some high-end systems still use conventional cone and dome drivers in non-planar arrays. B&W has applied its matrix antiresonance technology to a redesign of its large 801 studio monitor. The 801 Series 2 (price not set as of this writing) is said to go a full octave lower and higher than the previous version. Allison's biggest and best-sounding system, the IC-20 (once called the Model 10), is now shipping, and the price has settled at \$4,900 (see "Currents," October 1986).

Jim Winey of Magnepan has been spending time refining his production techniques. Dull work, you might say, but the result is not. The new MG-2.5R is a two-way panel system with a ribbon midrange/tweeter that operates above 1 kHz and an improved planar-magnetic bass

driver. The MG-2.5R wins my sound-per-dollar prize for this show, providing a real high-end listening experience for \$1,550.

E. B. M.

ACCESSORIES

Whoever dreamed up the term "audio" for those little foam-covered transducers designed to fit within the ear gets my vote for a creative cuteness award. Two of the three new Koss Music Pals earbud models (KMP-400, -600, -800, \$12 to \$20)—among the best designs I've seen—come with a detachable headband and a standard 1/4-inch headphone adapter that fits over the miniplug so they can be used like conventional headsets. The Koss Porta Pro Jr. (\$40) is a very light, compact, folding, on-the-ear headset with a similar plug and adapter. Among more serious wares, Koss's SST-10 (\$120)—billed as a "home professional stereophone"—is a lightweight model fitted with compliant ear couplings to minimize leakage of ambient sound.

If you'd like to go cordless with your headphones but don't want to give up your beloved wired model, Memtek offers the Memorex Infrared Cordless Headphone Adapter (\$70). It consists of an AC-powered transmitter that connects to your system's phone jack and a small battery pack that clips to a belt or slips into a pocket to run the receiver that feeds your headset. The jack accepts a miniplug, however, so you'll need an adapter if your headset sports a standard 1/4-inch plug.

Sony has several new entries, from the lightweight, high-performance MDR-CD6 (\$120), through Luigi Colani's futuristic Fashion Series MDR-A60 (\$70) and the new open-air S Series (\$30-70), to a new budget model in the high-isolation V Series, the \$30 MDR-V1. Sony's Walkman portables were a crucial factor in starting the rapid expansion of the lightweight headset market—now it's the CD Discman and its competitors that are the mainspring, causing universal bandying of that overbanded term "digital."

For instance, four new Memorex models from Memtek are "digital ready," while Gemini's Soundsational AS-6 (at \$17, the top of its new line) offers "Compact Disc quality." And these are among the more moderate of current claims. Even Audio-Technica, whose press hand-out on the new AP line (\$40-60) contains no digital reference whatever, says the Sound Guard SG-750CD (\$50—and note that suffix) is for "digital music sources." ▶

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All of the models I've mentioned strike me as worthy entries in their respective price ranges, but I'm waiting for the day when someone announces a headset "custom-engineered for analog sound." It could happen.

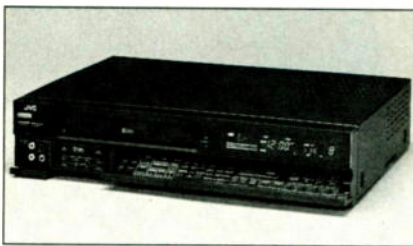
If you're a tape buff, note that Audio-Technica is supplying many of its microphones with miniature phone plugs on the cable and with 1/4-inch phone adapters, making them suitable for direct plug-in to a wide variety of consumer recorders. Among the new models, many of which are particularly appropriate for use with a camcorder, are two dynamic mikes suitable for vocal soloists (the \$23 ATR-20 and the \$50 ATR-30), a tie-clip condenser lavalier (the \$34 ATR-35), a supercardioid condenser Telemike (the \$90 ATR-55), and two stereo condenser models (the \$54 cardioid ATR-45 and the \$60 shotgun ATR-25).

Azden, which also is concentrating on the growing camcorder market, has added two models with "long/short" switches to convert them between shotgun and cardioid directional patterns. The ECZ-660 costs \$100; its budget sibling, the ECV-330, is \$50. Even more exciting for some videotaping is the FM wireless WM/T-30 (\$100), which can be used with either the WMS-10 or WMS-20 receiver at the camcorder; or you can buy the mike with its own receiver, as the WMS-30 (\$200).

A host of companies are selling tape rewinders to minimize wear on video heads, replacement costs being what they are. But slow-start VHS decks (which most are) retract the tape from the head drum during fast-wind, making an accessory rewriter superfluous, at least for headwear reasons. Discwasher has added a head cleaner for 8mm camcorders and a surface cleaner for CDs and CD-Vs; 3M has a Scotch head cleaner for VHS-C models. The Geneva Accutune checkout tape (\$19, with choice of VHS or Beta models) helps optimize audio-video system performance. And Geneva already has a prototype head cleaner for DAT decks—the first I'm aware of.

Signet has added a battery-powered (four AA cells, supplied) CD cleaner. The SK-315 (\$60) wipes the disc surface radially for ten seconds with a cleaner-moistened pad, then applies a dry, chamoiselike pad for another ten seconds. Its sister company, Audio-Technica, has added a new line of audio and video cables. And Sony says it plans a major effort in this area with a beefed-up line of cables and plug adapters.

As audio and video systems become more complicated, the idea of a single remote control for multiple components becomes more attractive. Magnavox's universal remote works with many brands of VCRs, TV sets, and cable boxes and is available with certain Magnavox sets and as a separate accessory for \$100. CL-9's CORE (Controller of Remote Electronics), first reported on in last November's "Currents," is apparently now available for \$199. If you recall, its microcomputer-like design enables it to learn the codes of other remotes and combine sequences of commands into a single keystroke.



JVC HR-S7000U SUPER VHS VCR

Similar in concept to the CORE, Memtek's Memorex programmable infrared remote control (\$100) can also chain command codes at the press of a single key. You could, for example, program it to turn on the VCR *and* rewind the tape (following time-shift recording, for instance) at a single command. As many as 24 keystrokes can be combined in up to 24 different sequences, depending on memory. In addition, as many as five functions can be triggered by a built-in timer that can be set for any hour and day within a two-week period, very much like a VCR's timer. Other universal remotes of the learning type, most priced around \$100, were shown by Onkyo, Sanyo, R. L. Drake, and others.

If you're looking for a way of organizing your videotapes so you can find what you want when you want it, look into Showfinder. Its cataloging system is the easiest to maintain of any I've seen, especially if you regularly record multiple items per tape in the slowest VHS or Beta modes—though the six-hour-maximum reporting format presumes you won't use T-160s. The standard version (about \$25) includes time-shift programming aids, a time/counter scaling system, an unlosable pen, and a manual in which the author, Christopher Blunden, says he has set out to be the Erma Bombeck of the video recorder. The Junior version (about \$12.50) is pared down to the portion actually used

in cataloging.

The number of caddies and the like for CDs is staggering. Everybody, it seems, wants to get into the act, including makers of replacement jewel cases with double boxes that can hold as many as four CDs. The only such product that impressed me, however, was Shape's proprietary design, which includes a little lever system to ease removal of the disc. The company sells primarily to other companies that want to package their CDs in the Shape case, but empty cases are available as well.

A newcomer to home-entertainment furniture is Acoustic Research, whose TSW cabinet (to match the TSW-Series speakers) sells for \$250 in walnut or \$290 in oak. A novel idea in the two ensembles introduced by Status at the show is side cabinets that hold "bookshelf" speakers up off the floor, with a tape-storage compartment in what would otherwise be the wasted space of a speaker stand. An adjustable shelf positions even minis at ear height in the speaker compartment, which has its own grille cloth. Three-piece ensemble prices are in the \$1,000 range. And newcomer Fineline Furniture Systems has simple, solid, handsome modules that combine in various ways or can stand alone. *R.L.*

BLANK TAPE

With hardware manufacturers glancing nervously at each other following Marantz's announced intention of selling its DAT deck in this country, 3M, Fuji, Maxell, and others are ready to sell DAT tape. But quantities of both the tape and the decks will undoubtedly be limited at first, pending a decision on whether a copy-code chip will be required in decks sold here.

The tape companies are much less diffident about S-VHS (generally called Super VHS), even though a Copy Code law could be passed to require video as well as audio decks to incorporate a spoiler chip. Again, 3M is among the first of the independent tape-makers to offer the product. In fact, 3M says it had developed its magnetic particle even before JVC released advance specifications for the S-VHS formulation. It will be interesting to see what other applications this extra-fine-grain particle assumes.

Along with 3M's Scotch brand, TDK, Fuji, Maxell, and GE have announced plans to market S-VHS videotape. So far, only 3M and Fuji have said they will include the compact version, S-VHS-C; as

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Super VHS-C camcorders start to appear, this certainly will change. But recent VHS-C camcorder sales have convinced several tape companies to step up production of the compact size in conventional formulations. Among them is BASF, one of the few companies that also makes T-160s at the other end of the playing-time spectrum.

Having established its small beachhead, 8mm seems to be standing pat; most of the companies that now are rushing toward DAT and S-VHS tapes already have 8mm formulations and apparently see no need to upgrade them when the spotlight is turned elsewhere. Similarly, audio cassettes are taking something of a back seat to the furor over DAT, though last month we were able to round up more than 30 new or improved formulations for testing.

New brands continue to arrive from Korea. The latest is Scen'a, sold by Kolon Scen'a, Inc., a U.S. subsidiary of Kolon Industries, Inc. Meanwhile, JECS Technologies of St. Paul, Minnesota (an address that's not unfamiliar in the tape business), has stepped in to fill the void left by the departure of PD Magnetics. PD, you may remember, was a joint venture of Philips and Du Pont (hence the initials) and was the only company aside from BASF selling true chromium dioxide (Du Pont Crolyn) formulations. Now JECS plans to offer chrome videotapes. R.L.

NEW VIDEO

Once again, it was video that provided the greatest variety of interesting news at the show, with official introductions of the new S-VHS format, CD-Video, and the official nonintroduction of ED Beta.

New Format No. 1: S-VHS—or Super VHS—is the new, high-bandwidth version of the most popular tape format. Emboldened by Sony's previous introduction of the Beta I_s recording mode, which makes tapes that can't be played on earlier Beta machines, JVC finally abandoned the stricture of universal compatibility: S-VHS recordings are made on the new S-VHS tape formulation and will not play on regular VHS decks. However, S-VHS machines include a switch that enables them to record in the regular VHS mode and will play existing VHS recordings as well. S-VHS boasts a carrier deviation of 1.6 MHz (instead of 1.0 MHz) for a claimed horizontal resolution of about 400 lines, nearly twice that of previous VHS decks. The system also uses a special method of eliminating interference between lumi-

nance (Y) and chrominance (C) signals. This technology is licensed from Faroudja Laboratories, but it is different from the Faroudja detail enhancement used in other home video products.

S-VHS will offer significant picture improvement on existing TV sets, but for maximum benefit, you must have a special monitor that can accept the Y and C signals separately through a single four-pin connector called an "S-video" input. JVC announced four S-video monitors and monitor/receivers, ranging in size from the 20-inch AV-2057S (\$569) to the 220-pound, 35-inch AV-M3587S (price not yet



ZENITH VRD-700 SUPER VHS VCR

available). Other S-video sets appeared from Panasonic (the 27-inch CTJ-2790R, \$1,150; the 31-inch CTJ-3170R, \$2,700) and from Sharp, Sony, and Mitsubishi. Many companies, however, did *not* offer S-video inputs even on their newest and most expensive sets.

JVC's HR-S7000U S-VHS VCR (\$1,200) has MTS decoding, VHS Hi-Fi (whose audio quality is said to benefit from S-VHS's improved tape formulation and mechanical smoothness), and an index marker/search feature that provides easy access to previously recorded segments. The Sharp VC-D100X S-VHS deck has flying erase heads, a shuttle knob that directly controls tape motion for precise insert editing, and a counter that reads in minutes and seconds. Other S-VHS decks were shown by Panasonic, Hitachi, Zenith, and Mitsubishi.

Subjectively, an S-VHS deck provides video performance approximately equal to that of 1/4-inch videotapes or Laserdiscs. While it cannot, as rumored, stand comparison with a 1-inch open-reel video recorder, S-VHS offers a significant and worthwhile improvement over previous VHS and Beta machines. Its superiority to many broadcast and cable signals means that its maximum performance will be realized only with a high-quality camera—or from prerecorded S-VHS movies.

S-VHS camcorders were shown by

JVC, Sharp, and Panasonic, with the latter's PV-5350 demonstrating an astounding 1-lux capability. The prerecorded software situation is somewhat more complicated. JVC attempted to get the ball rolling by exhibiting its BR-S710 industrial S-VHS duplicator, but owners of video stores may not want to stock both regular and S-VHS versions of everything. It will probably take at least a year for a significant number of prerecorded titles to appear at your local store, during which time S-VHS will appeal mostly to home tapers and camcorder users. T-120 tapes are expected to retail for about \$20, at least until the price-cutting wars begin anew.

New Format No. 2: Not to be outdone, Sony demonstrated its own version of high-band video, called ED (for extended definition) Beta. Like S-VHS, ED Beta uses an elevated carrier frequency with wider deviation and Faroudja image processing, achieving a horizontal resolution of about 500 lines. At the show, the ED Beta demo looked slightly better than the best of the S-VHS setups. But ED Beta's metal-particle tape may prove ill-suited to older machines, in contrast to S-VHS's high-bias ultrafine ferric-oxide-based formulation, said to improve quality even when used for recording on regular VHS decks.

The ED Beta machine shown was a bulky laboratory prototype; Sony announced its intention to export ED Beta to the U.S. sometime next year, a decision that may change depending on what happens with S-VHS.

New Format No. 3: The introduction of CD-Video made the biggest splash at the show. Developed by Philips and supported publicly by about 30 hardware and software companies, CD-Video is actually two formats—one new and one old. The new one is a CD-size (about 4 1/4-inch) disc distinguished by its gold-colored reflective coating and containing 20 minutes of CD-style digital audio on the inside of the disc plus as much as five minutes of video with digital sound on the outside. This is called the "CD-V single."

The CD-V player is hooked up to both a sound system and a video monitor. When you push PLAY, the laser moves across to the video portion and begins play at 2,200 rpm—more than four times the maximum speed of a CD, which is necessary to accommodate the video signal's greater bandwidth. When the video section is finished, the player slows down, skips back to the inside of the disc, and plays the audio-only portion, meanwhile

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displaying time and track information on the TV screen. Most of the players, however, can be set to play the audio portion first.

The "old" CD-Video is simply the 8- and 12-inch Laservision videodisc, which failed commercially in Europe but has been kept alive in the U.S. and Japan, largely through the efforts of Pioneer. An 8-inch LV disc is now to be called a "CD-V EP," while the 12-inch version is a "CD-V LP." Both kinds (but not, at first, CD-V singles) will be pressed at a new plant being built jointly by Philips and Du Pont in King's Mountain, North Carolina. About ten percent of existing LV discs contain digital soundtracks in addition to the standard FM stereo; all discs bearing the CD-V designation will have digitally encoded sound.

With the new designations comes new packaging. Philips, believing that the LV disc in its cardboard sleeve looked too much like an audio LP, has designed larger versions of the CD jewel box: The "cover art" stops two inches short of covering



THE YAMAHA CDV-1000 HANDLES CDS AND ALL SIZES OF CD-Vs.

the disc inside, leaving a crescent of rainbow reflection showing through the cover. The new, elegant package is heavier, three times thicker, and costs about \$2 more at retail than the old cardboard version.

Existing LV players are compatible with the CD-V EP and LP, but those not equipped to decode their digital soundtracks will play the FM tracks only (which will continue to be included). The CD-V single, however, requires completely new hardware; any CD player will track the audio-only portion, but not even existing combination CD/LV machines (such as Pioneer's CLD-909) can play the video.

The new machines will come in two varieties: "Combi-players," retailing for \$800 and up, will accept normal CDs and all three sizes of CD-V discs; smaller "single" or "clip" players will accommodate only the 4 1/4-inch size and will sell for \$500-\$600. Combi-players were shown by several manufacturers, including Magnavox, Toshiba, Denon, Yamaha, Sony, and Pioneer (whose CLD-1010 is reviewed in

this issue).

Record companies love the prospect of selling all those videos they originally made as promotions. But it's by no means certain that the teenagers who seem to be the primary target will pay \$8 apiece for a CD-V single containing one video version plus one or more audio versions of the same song (which is how most of the new discs are programmed). And that's assuming these kids have already convinced their parents to shell out \$500 or more for a player.

One possible benefit of the CD-V brouhaha may be the revival of the laser videodisc, a worthy format with excellent picture and sound quality that also offers greater ease of use and access than videotape. And, in contrast to S-VHS, duplicating facilities for these discs already exist. Philips affirmed its commitment to movie and music Laserdiscs by showing many interesting classical titles on the various Polygram labels.

If you have no desire to play rock CD-V singles, you might consider Pioneer's LD-S1 Laservision player. Its digital special effects, built-in video noise reduction, and 420-line resolution—not to mention the cachet of its deluxe lacquered finish, rosewood side panels, and \$2,000 price tag—caused many videophiles' mouths to water.

E. B. M.

VHS VCRS

There were other new VCR developments besides S-VHS. The rapid access afforded by the CD makes the task of finding something on a videotape seem all the more painfully slow. Akai's answer is a new "quick start" VHS transport, shown in four machines from \$449 to \$849, in which the tape stays partially threaded in stop and fast-wind modes (similar to Beta decks, which have always had the faster transport operation). This accomplishes two things: The transition from fast-wind or stop to play, which previously took seven or more seconds, is now reduced to 1.5 seconds; and, because the tape is in continuous contact with the control head, the counter can keep precise track of tape position (displayed in minutes and seconds) at all times. Additional help in locating taped segments is available from the increasingly popular VHS Index Search System (VISS), which enables you to insert multiple index marks on the tape for faster searching.

High-precision time-based tape counting, which has been available for some

time on both professional VHS and high-end consumer Beta decks, also appeared on a deck from Vector Research, the V-6040D, (\$1,100).

As the VCR market broadens, there are more users who find themselves intimidated by the complexities of programmed recording. Panasonic and Canon have introduced new VCRs with wireless infrared bar-code scanners and programming sheets containing codes for all possible channel numbers, dates, and start and stop times. Some cable companies are expected



PANASONIC'S PV-4761 HAS A BAR-CODE READER FOR TIMER PROGRAMMING.

to begin publishing bar-code listings this fall. Panasonic's bar-code VCRs are the PV-4722 (\$499) and a companion Hi-Fi MTS model, the PV-4761 (\$799).

Canon's VR-HF800 bar-code programmable VCR (\$1,199) is an example of another big trend in VCRs: digital signal processing. In addition to the usual digital freeze frame, the Canon has a strobe mode for displaying a series of frames from a running tape, mosaic and solarizing modes that manipulate resolution and color values, and a mode in which the tuner scans nine different channels—grabbing one frame from each—and displays them in a 3-by-3 matrix so you can choose which one you want to watch. RCA's new VPT-595 (\$799) has a similar feature that shows 12 channels in a 3-by-4 array; the company's newest VHS Hi-Fi model, the \$799 VPT-630HF, lacks the multichannel scan but has locking two-speed picture search in both directions and can skip ahead exactly 30 seconds with a single button push.

Digital processing is also being used increasingly for picture enhancement. The NEC DX-5000U (\$1,199), described in the July "Currents," uses it to reduce luminance and chrominance noise and to compensate for tape dropouts. A similar unit, called the DVR-1 (\$1,100), is being marketed by DBX.

E. B. M.

Additional news on camcorders and 8mm video appears in this month's "Currents."

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RURAL-FREE COUNTRY

WITH ALL THE TALK ABOUT THE “new traditionalism” in country music, both pro and con, one unanswered question keeps bumping around in the back of my mind: Who lives in the country anymore?

Granted, the songs that country folks have sung throughout the years did not always originate in the hinterland: Minstrel tunes, vaudeville hits, and various recordings all have made their way into the rural repertoire. But the point is that until very recently, there *was* a rural repertoire—in fact, a whole rural life that functioned separate-

ly and differently from cosmopolitan life. Most rural people, for example, could actually make their own music, even if it was only church-singing, and the songs that were passed around from person to person reflected a shared daily existence with communal rituals and rites of passage. They also reflected a deep feeling for the land and the mysteries of birth and death.

Today, when fewer than ten percent of Americans live on farms and when many so-called country singers, songwriters, and musicians grow up in the rock 'n' roll suburbs and don't learn about Hank Williams until they get to college, it seems sadly beside the point to argue whether George Strait or Ricky Skaggs sounds as good as Lefty Frizzell or Hank Sr. What concerns me is that new, meaningful country music can't readily develop without a healthy, functioning rural America to support it. Or has country degenerated into just another style in that great supermarket of musical fashion?

True, as Leslie Berman points out in “The Backbone of Country,” her March feature in this magazine, many veteran country artists spent too many years staring at the backside of a mule to ever want to do it again. But the image we have of small-farm life as unbearably hard is based on the illusion that there are only two options possible: struggle forever as a dirt-poor sharecropper or give in to agribusiness. Surely our society can provide alternatives.

As nice as it is to honor the roots of country music with awards and reissues, biographies and dedications, it would be nicer still if we gave more thought to watering those roots. Farm Aid was a start. If we really want country music to thrive, then we must see the larger picture. Drums and electric guitars never could kill country: It's too real. But how can you have country music without country folks?

Joe Blum



ANDRÉS SEGOVIA: A DIOS

ANDRÉS SEGOVIA HAD A LAUGH ON most of us by living to the age of ninety-four and playing the guitar right up to the end. At least, he had a laugh on me. I first heard him as a student in Baltimore, when he was only seventy-four. I went backstage to greet him and offered the expected compliments. He gently took the note pad out of my hand and penned his flamboyant autograph while smiling benevolently upon me from what seemed an enormous height. Little did we know that he would spend the night in the hospital.

It was in the next morning's newspaper, alongside the review of the concert. After greeting well-wishers following his recital at the Lyric Theater, Segovia had collapsed in pain and been rushed to the hospital; his condition was not known. A jolt went through me. I remember thinking that I may well have attended his last recital. Later that day, we learned that he had merely passed a kidney stone. So much for my fateful encounter.

That was five or six years before the guitarist's son Carlos was born. The more I learned about the old man, the more I laughed at my premature anticipation of his death. He kept on playing, he didn't seem to lose his touch or his speed—well, maybe a little after he reached the age of eighty-five or so—and he went everywhere. One day, he came to Washington. I was writing for *The Washington Star*, and I went over to the Watergate Hotel in order to interview him.

It was like making a pilgrimage. I had been one of his fans for a very long time. I had encountered him as a student; now I was meeting him as a professional. When I saw him, I immediately fell under the spell again. He was visibly old, but he still had that extraordinary energy and warmth. We shook hands . . . and I realized that the same man who had looked like a giant the last time I saw him was now looking up at *me*. We sat down to talk. He complained of the ringing in his ears that he got every time he flew and apologized for the trouble he had hearing me. I asked him about all sorts of things, especially about his contact with the greats of Spanish music. We had a wonderful time.

Just before he had to leave, Segovia took my right hand in his left and said, “You know, we are all islands. Music is the ocean that unites us.” I'm sure it was something he had said many times, but it didn't bother me that he chose to say it one more time, to me.

Ted Libbey

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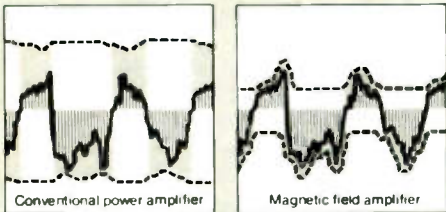
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THE CARVER CAR AMPLIFIER introduces Magnetic Field Amplifier technology to automotive high fidelity. Finally, the traditional weak link between car stereo decks and modern speaker design has been replaced with Carver technology. Into 1/10th of a cubic foot, Bob Carver has engineered a complete 120 watts RMS per channel amplification system with the fidelity, accuracy and musicality demanded by the most critical reviewers and audiophiles.

ESSENTIAL POWER. Even before the exciting advent of car Compact Disc players, an abundance of power has been necessary to reproduce, without distortion, the frequency and dynamic range produced by modern decks.

Unfortunately, conventional amplifier technology is particularly unsuited to delivering this needed power to the specialized car interior environment. Like their home stereo counterparts, traditional car designs produce a constant high voltage level at all times, irrespective of the demands of the ever-changing audio signal—even those times when there is no audio signal at all! Because automotive amplifiers must, obviously, derive their power from the host vehicle, such an approach results in substantial drain to delicately balanced automobile electrical systems.



Solid line: audio output signal. Broken line: power supply voltage. Shaded area: wasted power. Vertical lines: power to speakers.

The Carver Magnetic Field Car Amplifier is signal responsive. Highly efficient, it produces only the exact amount of power needed to deliver each musical impulse with complete accuracy and fidelity. Thus the Carver Car Amplifier not only reduces overall long-term power demands, but produces the large amount of power necessary for reproduction of music at realistic listening levels without the need for oversize power supply components. Important considerations in the minuscule spaces which quality car design allocates to add-on electronics.

INTELLIGENT POWER. A hallmark of all Carver amplifiers is the careful integration of sophisticated speaker and amplifier protection circuitry. The Carver Car Amplifier is no exception.

Speakers are protected with a DC offset internal fault protection design which turns off the power supply at first hint of overload. An overcurrent detector mutes audio within microseconds of a short circuit, as does an output short circuit monitoring circuit. Together, these three circuits eliminate the potential need to replace fuses, revisit your autosound installer, or worse yet, replace expensive speakers due to a moment's indiscretion with your deck's volume control.

ASSIGNABLE POWER. Integrated bi-amplification and bridging circuits, along with The Carver Car Amplifier's compact configuration make it ideal for multiple-amplifier installations.

The built-in 18dB/octave electronic crossover allows use of two amplifiers in a pure bi-amplification mode without addition of extra electronics. Or, at the touch of a button, one Carver Car Amplifier can become a mono amplifier for subwoofers while the other Carver Amplifier handles full range. Or, for astonishing dynamic and frequency response, two Carver Car Amplifiers may be operated in mono mode into 8 ohms for a 240 watt per channel car system which will truly do justice to digital without taxing your car's electrical generation system.

INNOVATIVE POWER. Can 1/10th of a cubic foot of space hold yet more innovations? Yes.

Carver has addressed the ongoing problem of head-end/power amplifier level matching: Output of current car decks varies widely from brand to brand and model to model. The result can be a less than perfect match. The Carver Car Amplifier incorporates circuitry which compensates for variations in head-end output, reducing noise and optimizing signal-to-noise ratio. In addition, Carver has added a subsonic

filter which removes inaudible power-robbing infrasonics before they can tax the amplifier and speakers. Finally, a delayed turn-on circuit activates the Carver Car Amplifier after your head-end unit has powered up, to eliminate starting pops and thumps.

ACCURATE POWER. It goes almost without saying that a product Bob Carver designs for the road carries the same superb electronic specifications that his home audio products are known for.

The Carver Car Amplifier is flat from 20Hz to 20kHz, down -3dB at 16Hz and 30kHz. Not coincidentally, the usual specifications given for Compact Discs. A signal-to-noise ratio of over 100dB means that, in even the most quiet luxury sedan, you will never be annoyed by hiss. The other specifications are equally as impeccable. You may peruse them in our literature or in independent reviews soon to appear.

ACQUIRABLE POWER. The remarkable Carver Car Amplifier is currently available for audition at Carver dealers across the country.

It is worth the journey. Whether you have a car system in need of the sonic excitement possible with abundant power, or are in search of the perfect complement to a new high-performance automobile, you owe it to yourself to experience the logical extension of Carver technology—the Carver Car Amplifier M-240.

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Input Sensitivity: Variable 250mV to 4V

Signal to Noise Ratio: (Referenced to 120 W, A weighted into 4 ohms; Greater than 106 db

Crossover: 115 Hz, 18 dB/octave

Weight: 4.7 lb.

The Carver Car Amplifier



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ON THE FIRST DAY OF VLADIMIR HOROWITZ'S recent Milan recording sessions with Carlo Maria Giulini and the Orchestra of La Scala, all seemed set for an easy ride. But what makes sessions with Horowitz so exciting is not just his pyrotechnical display at the keyboard or even the pianist's mercurial personality, but the crises that can develop. And these sessions—the master's first concerto recording in nearly a decade and his first-ever collaboration with Giulini—soon produced their share of troubles.

Surprisingly, Horowitz chose Mozart's

Piano Concerto in A, K. 488, a piece that poses few technical problems for the performer. During the first of the five two-hour sessions, Horowitz recorded the first two movements complete and made a start on the third. Pianist and conductor at once responded to each other, and the Deutsche Grammophon recording team, under the supervision of American producer Thomas Frost, breathed a sigh of relief.

Perhaps it was the very success of this session that prompted Horowitz—with only one scheduled session left available—to re-

turn to an idea that had been rejected some time earlier: a video version of the performance. DG's Günther Breest, who has been masterminding the label's association with Horowitz, made phone calls in every direction. Within minutes, Albert Maysles's camera team, which had already worked on a Horowitz film, was on its way to a New York airport for an overnight flight to Milan. Simultaneously, cameramen from Rome carted mountains of equipment by road up to the remote, dry-sounding studio (located in the Milan suburbs) used for rehearsal by the opera and ballet companies of La Scala.

As any music lover knows, Horowitz is reluctant to perform at any hour other than four in the afternoon, local custom notwithstanding. So it was that at 4 p.m. on the Monday following the weekend crisis, everything was ready for the great man. The twin teams of cameramen and the orchestra of La Scala had arrived. Giulini was quietly puttering around seeing that chairs were in the right positions and the music in order, and members of the DG recording team were wandering in and out of their control room. Well back on a high rehearsal stage sat a select posse of journalists from all over Europe, who had been warned right up to the last minute that the invitation might be cancelled should the master so much as whisper an objection. Even after his nerve-racking weekend, Breest managed a hopeful grin.

But where was Horowitz? It was Hamlet without the prince, and even the calm Giulini, the most equable of Italians, began to show signs of impatience. To keep the orchestra occupied while the engineers and cameramen adjusted their equipment, the conductor did no fewer than four takes of the opening tutti. The cameramen remained noisy, and after several quiet warnings the maestro delivered, in both English and Italian, what for him was a pronouncement of anathema.

Still no Horowitz. After half an hour, Wanda Toscanini Horowitz, daughter of the great Italian conductor and vigilant guardian of her husband's welfare, took her seat, accompanied by two or three friends. That



At Horowitz's first concerto recording in nearly a decade, it was a mixture of magic and Romanticism.

CLASSICAL

Vlad Tidings from Milan

*On the heels of his Moscow triumph,
Horowitz makes his first recording of a Mozart concerto*

BY EDWARD GREENFIELD

was promising, but it would be another ten minutes before Horowitz himself emerged amid a gaggle of cameramen. Clearly enjoying every moment, he beamed his gnomish grin, fingered his flamboyant black-and-white bow tie, and sat down at the piano.

At once the electricity started to flow at quite a new voltage. A Rachmaninoff-like flourish or two from Horowitz preceded the first real take. The orchestra was at once transformed. But then, to our amazement, the great virtuoso, reading laboriously from the music, started fluffing notes. It was only a momentary lapse before the Horowitz magic took over, and with it a fair measure of willful Romanticism. That included a big cadenza by Busoni in place of Mozart's own short and simple one. Stylists might perhaps take comfort that in the lovely F sharp minor slow movement, Horowitz followed modern scholarship by counting it as an Andante, not a lingering Adagio.

Since the whole concerto had to be videotaped in a single session, that movement was tackled even before the first movement was polished at all. But Horowitz, unlike Giuliani, seemed in no hurry. At one point, as everyone was waiting to do a take of the finale, he proceeded to play—to the delight of everyone except the recording staff and maybe Giuliani—the whole of the finale of Mozart's Sonata in B flat, K. 333, the work which is due to be coupled with the concerto on the finished record.

The effect was like being in Horowitz's own home in New York, where—as visitors have reported—the master will occasionally give just such an impromptu performance. But in recording sessions I have attended, I can only remember one equivalent display of unconcern—during a recording of Wagner's *Flying Dutchman* at the EMI studio in St. John's Wood. On that occasion, while waiting for the tenor to arrive, the magisterial Otto Klemperer went on for 20 minutes with a love duet, growling out the vocal line an octave lower as the mood took him.

Finally, the vital retake of the first movement of K. 488 was complete, with a half-hour of overtime running out as the con-

cluding chord was played. Everyone relaxed at last, but bright as a button, Horowitz eagerly made his way to the press section to talk with the journalists. Yes, he loved Mozart more than anyone: "Number one for me!" he said. He also commented that Mozart's operas are his special joy. He chatted of this and that, of the world's great orchestras, of the changes in the acoustics at Carnegie Hall (which he does not like) and of why he had chosen the Busoni (as he saw it, it was the best of the virtuoso cadenzas). Only when Horowitz was asked about the younger

generation of pianists today did the silent Wanda step in deftly. "He pleads the Fifth Amendment," said his wife firmly, daring anyone to defy such a veto.

Yet another audio session was required the following afternoon, but DG was not worried: The video version (which is crucial in order to multiply sales of the disc by attracting buyers outside the classical audience) was in the can. One thing we can be certain of: This version of the concerto, which DG hopes to release in the fall, will be very different from any we have already. ■



Carlo Maria Giulini, in his first collaboration with Horowitz, kept the orchestra occupied and the cameramen at bay while waiting for the pianist's entrance.

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CLASSICAL

The Shape of Things to Come

The year's forthcoming releases on CD, cassette, LP

ACCORD

(Distributed by Harmonia Mundi, U.S.A.)

- Bach:** *Magnificat; Cantatas*. Stich Randall; Saar CO, Ristenpart.
- Beethoven:** *Sonatas for Cello and Piano* (5).
- Beethoven:** *Sixteen National Airs, Opp. 15, 197 (original versions)*. G. Weichert.
- Berg:** *Chamber works*. Akerlund; Basel Ac, Wytenbach.
- Magnard:** *Quintet for Piano and Winds; Trio for Piano, Violin, and Cello*. Christian Keller E.
- Rogert:** *Suites for Cello* (3); *Silhouettes*. Keller.
- Schoeck:** *Notturmo; Eichendorff Lieder*. Tuller, Keller, Bern Qr.
- Shostakovich:** *Piano Sonatas* (2). C. Weichert.
- Sori:** *Guitar works*. Gaudi.
- Telmann:** *Chamber works*. Wenzinger E.
- Wolff:** *Complete String Quartets*. Artis Qr.
- Music of the 12th-14th Centuries*. Vas-seghi, Clemencic.

ANGEL

all CD

- Bartók:** *Concerto for Two Pianos; Sonata for Two Pianos and Percussion*. Labèque, Gualda, Drouet; City of Birmingham SO, Rattle (d).
- Beethoven:** *Piano Concertos* (5). Barenboim; Berlin PO, Barenboim (d).
- Beethoven:** *Piano Sonatas Nos. 13, 14, 23*. Watts (d).
- Beethoven:** *Piano Sonatas Nos. 14, 29*. Lucchesini (d).
- Beethoven:** *Symphonies Nos. 2, 4*. Philadelphia SO, Muti (d).
- Beethoven:** *Symphony No. 3; Overtures*. Philadelphia O, Muti (d).
- Beethoven:** *Symphony No. 7; Consecration of the House*. Dresden StO, Tate (d).
- Beethoven:** *Symphony No. 9*. Kenny, Walker, Power, Salomaa; London Classical Players, Norrington (d).
- Bruch:** *Violin Concerto No. 2; Scottish Fantasy; Romance*. Perlman; Israel PO, Mehta (d).

Chopin: *Etudes*. Gavrilov (d).

Chopin: *Piano works*. Lucchesini (d).

Gershwin: *Overtures*. New Princess Theater O, McGlinn (d).

Gershwin: *Porgy and Bess (excerpts); An American in Paris; Lullaby*. St. Louis SO, Slatkin (d).

Handel: *Messiah*. Battle, Ramey, Quivar, Aler; Toronto Mendelssohn Ch&SO, A. Davis (d).

Haydn: *Heiligmesse; Theresienmesse*. Vaness, Soffel, Blochwitz, Holl; Dresden StO, Marriner (d).

Lentz: *Crack in the Bell*. Daniel Lentz E, members of Los Angeles PO New Music Group (d).

Liszt: *Piano works*. Lucchesini (d).

Mahler: *Des Knaben Wunderhorn*. Popp, Weikl; London PO, Tennstedt (d).

Mahler: *Symphony No. 1; Blumine movement*. Israel PO, Mehta (d).

Mahler: *Symphony No. 2*. Augér, Baker; City of Birmingham SO, Rattle (d).

Messiaen: *Turangalila Symphony; Quartet for the End of Time*. City of Birmingham SO, Rattle (d).

Mozart: *Così fan tutte*. Vaness, Zeigler, Watson, Aler, Duessing, Desideri; London PO, Glyndebourne Ch, Haitink (d).

Mozart: *Le Nozze di Figaro*. Allen, Battle, Rydl, Hynninen, Murray,

M. Price; Vienna PO, Muti (d).

Mozart: *Oboe Concerto; Bassoon Concerto*. Schellenberger, Jensen; English CO, Tate (d).

Mozart: *Symphonies Nos. 36, 40*. St. Martin's Ac, Marriner (d).

Offenbach: *Les contes d'Hoffman*. Shicoff, Van Dam, Tear, Serra, Plowright, Norman; Brussels Op, Cambreling (d).

Rachmaninoff: *Piano Concerto No. 3*. Gavrilov; Philadelphia O, Muti (d).

Saint-Saëns: *Piano Concertos Nos. 2, 4*. Collard; Royal PO, Previn (d).

Saint-Saëns: *Piano Concertos Nos. 3, 5*. Collard; Royal PO, Previn (d).

Schubert: *Symphony No. 9*. Vienna PO, Muti (d).

Shostakovich: *Symphony No. 5*. Oslo PO, Jansons (d).

Stravinsky: *Petrushka; Symphony in Three Movements*. City of Birmingham SO, Rattle (d).

Tchaikovsky: *Romeo and Juliet; Francesca da Rimini; Capriccio italiano*. Oslo PO, Jansons (d).

Jazz Album: Works by Gershwin, White-man, Milhaud, Bernstein, Stravinsky. London Sinfonietta, Rattle (d).

Kiri Sings Gershwin. Te Kanawa; New Princess Theater O, McGlinn (d).

Skyscrapers—American East Coast School: Works by MacDowell, Carpenter, Paine, Foote. London SO, Klein (d).

The Sound of the Academy. St. Martin's Ac, Marriner (d).

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ARABESQUE

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Rossini: *Bel canto arias for tenor*. Blake; Ambrosian Ch, London SO, McCarthy.

Saint-Saëns: *Carnival of the Animals; Septet*. Hobson, Sinfonia da Camera.

Schubert: *Piano Trios in B flat, E flat*. Golub, Kaplan, Carr Tr.

J. Strauss: *The Blue Danube and Other Waltzes (arr. for voices and piano by the composer)*. New York Vocal Arts E.

Vaughan Williams: *String music*. English CO, Menuhin.

Wolff: *Piano Sonatas (4); Invitation to the Dance*. Ohlsson.

Wolff: *Songs*. Kimbrough, Baldwin.

Caedmon/Arabesque, 1995 Broadway, New York, N.Y. 10023.

ARCHIV

(Distributed by Deutsche Grammophon) CD and cassette; some, unspecified, in LP format as well

Bach: *Brandenburg Concertos* (6); *Triple Concerto*. Musica Antiqua Köln.

Bach: *Christmas Oratorio*. Argenta, Von Otter, Blochwitz, Baer; English Baroque Soloist, Monteverdi Ch, Gardiner.

Boycot: *Symphonies* (8). English Concert, Pinnock.

Corelli: *Trio Sonatas*. English Concert, Pinnock.

Haydn: *Lord Nelson Mass; Te Deum*. English Concert, Pinnock.

Haydn: *Symphonies Nos. 6, 7, 8*. English Concert, Pinnock.

Monteverdi: *L'Orfeo*. Rolfe Johnson, Von Otter, Baird, Tomlin-

For the past few years, HIGH FIDELITY has published two previews of the year's forthcoming recordings: one for LPs and cassettes, the other for Compact Discs. This year, only a single comprehensive listing will appear. The reason is that most labels have decided either to stop production of LPs altogether or to sharply curtail the number of releases appearing on vinyl. Sweeping changes in recording technology are making the LP obsolete, and the market is conforming.

The following abbreviations are used, alone or in combination: Ac (Academy), C (Chamber), Ch (Choir, Chorus), E (Ensemble), F (Festival), O (Orchestra), Op (Opera), P (Philharmonic), Qn (Quintet), Qr (Quartet), R (Radio), S (Symphony), and St (State). Where known, the number of CDs or LPs in multidisc sets is given in parentheses at the end of a listing; other parenthetical symbols used are a (analog), d (digital), h (historic), l (live), m (mono), and r (domestic reissue). Initials and first names appear only as needed.

son; English Baroque Soloists, Monteverdi Ch, Gardiner.

Mozart: *Piano Concertos, K. 166, 467.* Bilson; English Baroque Soloists, Gardiner.

Mozart: *Piano Concertos, K. 508, 537.* Bilson, English Baroque Soloists, Gardiner.

Scarlatti: *Keyboard Sonatas.* Pincock. **Telemann:** *Wind Concertos.* Music Antiqua Köln.

Vivaldi: *Concertos (including L'Amoroso).* English Concert, Pincock.

Vivaldi: *L'Estro armonico.* English Concert, Pincock.

CD reissues

Bach: *Complete Organ Works (12 CDs).* Walcha.

Purcell: *The Fairy Queen.* Gardiner.

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Dvorák: *Biblical Songs, Op. 91.* Finnila; Malmö SO, Handley.

Eckorborg: *Piano Concertos Nos. 1, 3.* Palsson; Helsingborgs SO, Paulula.



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Bach: *Organ Music, Vol. 4.* Fagius.

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Beethoven: *Piano works.* Pöntinen.

Dopplert: *Music for Flutes and Piano.* Dien, Aitken, Braaten (2).

Franck: *Complete Organ Music, Vol. 1.* Sanger.

Franck: *Complete Organ Music, Vol. 2.* Sanger.

Giuliani: *Works for Flute and Guitar, Vol. 1.* Helasvuo, Savijoki.

Giuliani: *Works for Flute and Guitar, Vol. 2.* Helasvuo, Savijoki.

Grieg: *Complete Piano Music.* Knardahl (10).

Haydn: *Complete Lute Music.* Lindberg.

Haydn: *London and Paris Symphonies, Vol. 1.* Stockholm Sinfonietta, Järvi.

Mozart: *Music for Flute and Orchestra.* Helasvuo.

Nielsen: *Symphony No. 5; Violin Concerto.* Kang; Gothenburg SO, Järvi.

Schnittke: *Concerto for Piano; Concerto for Two Violins; Concerto for Oboe and Harp.*

Schumann: *Symphonies Nos. 1, 2 (orch. Mahler).* Bergen PO, Ceccato.

Scriabin: *Complete Piano Sonatas.* Pöntinen (2).

Sibelius: *Complete Piano Transcriptions.* Tawaststjerna (2).

Sibelius: *Violin Concerto.* Marcovici; Gothenburg SO, Järvi.

Tchaikovsky: *Grieg:* *Piano Concertos.* Pöntinen; Bamberg SO, Seegerstam.

Telemann: *Complete Recorder Duets.* Pehrsson, Laurin.

Tubini: *Double Bass Concerto; Valse Triste; Violin Concerto No. 2; Estoman Dance Suite.* Ehrén, Garcia; Gothenburg SO, Järvi.

Tubini: *Symphony No. 7, Sinfonietta.* Gothenburg SO, Järvi.

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The Russian Cello, Vol. 2: Works by Prokofiev, Rachmannoff, Rostropovich. The Russian Violin: Works by Shostakovich and Schnittke.

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Carter: *The Vocal Works (1975-81): A Mirror on Which to Dwell; Sviruga; Frost Songs; In Sleep, In Thunder.* Speculum Musicae (d).

F. Couperin: *Ordres Nos. 8, 23.* Appel.

Machover: *Valse (excerpts); String Quartet; Famine.* Electric Phoenix, Hudson Qr (d).

Mozart: *Piano works.* Karis (d).

Wuorinen: *Works for Violin and Piano (1969-80).* Hudson, Ohlsson (d).

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Jancsó: *String Quartets.* Tálch Qr.

Mozart: *Sonatas for Violin and Piano.* Messiercur, Bogunia.



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J.S. Bach: *Art of the Fugue.* Juilliard Qr.

Bach; **Calli;** **Scarlatti;** **Telemann;** **Weiss:** *Guitar works.* Williams.

Bartók: *Concerto for Orchestra; Miraculous Mandarin.* Berlin PO, Mehta.

Bartók: *Concerto for Orchestra (transcribed for piano); Dance Suite; Petite Suite.* Sandor.

Bartók: *Bluebeard's Castle.* Marton, Ramey; Fisher.

Beethoven: *Cello Sonatas (5); Variations.* Ma, Ax.

Beethoven: *Piano Sonatas Op. 2, No. 2, Op. 28.* Perahia.

Beethoven: *Symphony No. 3; Contredances (12).* O of St. Luke's, Thomas.

Berg: *Seven Early Songs; Altenberglieder.** Norman, Barenboim*.

Berg: *Seven Early Songs; Altenberglieder.** Norman, Barenboim*.

Biber; **M. Haydn;** **Telemann;** **Vivaldi:** *Trumpet concertos.* Marsalis; English CO, Leppard.

Brahms: *Double Concerto; Piano Quartet in C minor, Op. 60*.* Stern, Ma, Ax*.

Brahms: *Quartets, Op. 51, Nos. 1, 2; Op. 67.* **Haydn:** *Quartet Op. 50, No. 6.* Juilliard Qr.

Carulli: *Works for flute and guitar.* Rampal, Lagoya; Franz Liszt CO, Rolla.

Copland: *Appalachian Spring Suite; Billy the Kid; Four Dance Episodes from Rodeo.* London SO, Thomas.

Danzig; **Mozart;** **Reich:** *Trios.* Stern, Rampal, Rostropovich.

Duffy: *Heritage Suite.* Eban (narr.); Israel PO, Mehta.

Dutilleul; **Maxwell Davies:** *Violin Concertos (world premieres).* Stern; O National de France, Maazel; Royal PO, Previn.

Gershwin: *Let 'Em Eat Cake; Of Thee I Sing.* McGovern, Kert, Gilford; O of St. Luke's, Thomas.

Glass: *Akhmatov.* Esswood; Stuttgart OpCh&O, Davies.

Grieg: *Peer Gynt Suites Nos. 1, 2; Incidental music.* Hendricks; Oslo PO, Salonen.

Haydn: *Seven Last Words.* Valente, De Gaetani, Paul; Juilliard Qr.

Haydn: *Morzin Symphonies.* L'Estro Harmonico, Solomons.

Mendelssohn: *Concertos for Two Pianos in A flat, E flat.* **Mendelssohn/Moschles:** *Variations on a Theme from Weber's Preziusa.* Paratore.

Mozart: *Violin Concerto No. 2; Rondo, K. 373; Concerto K. 271a (attributed to Mozart).* Lin; English CO, Leppard.

Mozart: *Violin Concertos Nos. 1, 4; Rondos (5), K. 269.* Lin; English CO, Leppard.

Mozart: *Mass in C minor.* Mattila, Blochwitz, Ramey; CO of Europe, Prague Ch, Abbado.

Mozart: *Sinfonia concertante, K. 364 (arr. for violin and cello).* Stern, Ma; O of the Toho School, Akiyama.

Ponchielli: *La Gioconda.* Marton; Domingo, Ramey, Carroli, Cossetto, Buday; Hungarian PO, Patané.

Prokofiev: *Romeo and Juliet Suites Nos. 1, 2; excerpts from Suite No. 3.* Berlin PO, Salonen.

Puccini: *Rare Arias.* Freni, Carreras; Thomas.

Puccini: *Timandot (highlights).* **Rimsky-Korsakov:** *Scheherazade; Russian Easter Overture.* Israel PO, Mehta.

Schubert: *Sonata in A, Op. Posth.* Perahia.

Schubert: *Sonatas (3), Op. 137; Sonata (Duo) in A, Op. 162.* Stern, Barenboim.

Schubert: *Quintet in C.* Greenhouse, Juilliard Qr.

Schubert: *Symphonies (complete); Rosamunde (excerpts).* Berlin PO, Barenboim.

Schumann: *Works for cello and piano.* Ma, Ax.

Sibelius: *Violin Concerto; Fantasy.* Lin; Philharmonia O, Salonen.

Tchaikovsky: *Arias.* Dimitrova, Pésko.

Tchaikovsky: *Symphony No. 6; Marche slave.* Chicago SO, Abbado.

Weill: *Seven Deadly Sins.* Migenes-Johnson; London SO, Thomas.

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Glazunov: *Symphones (8)*. U.S.S.R. Ministry of Culture O, Rozhdestvensky (5).
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Lalo: *Le Roi d'Ys*. Vanzo, Massard, Guiot, Rhodes; Dervaux (2).
Moniusko: *Halka*. Various soloists; Cracow Ch. Polish RSO, Sankow.
Mozart: *Invententos, K. 136, 137, 138*. Virtuosi of Moscow, Spivakov.
Mussorgsky: *Khovanshchina*. Soli (3).
Mussorgsky: *The Sorochinsky Fair; The Wedding*. Soli.
Rachmaninoff: *Symphones (3)*. Moscow PO, Kitaenko (2).
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Schubert: *Waltzes*. Ader.
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Beethoven: *Piano Sonatas*. Fischer.
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Chopin: *Mazurkas*. Indjic.
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Mozart: *Sinfonia concertante; Concerto in C*. Gulli, Giuranna; Padua-Venice CO.
Telemann: *Fantasias for Two Oboes*. Goritzki, Glatzner.
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Wolf: *Early Songs*. Fischer-Dieskau, Höll.

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Bach: *Cantata No. 51*. **Bach/Scarlati/Handel:** *Arias for soprano, trumpet, and strings*. Norden, Halley; Alexander Qr.
Bloch: *Sonata No. 2 for Violin and Piano*. **Gamert:** *Sonata for Violin and Piano*. Harth, Davenny.
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Milhaud: *Le pauvre matelot*. Op Soloists E.
Onslow: *String Quartet, Op. 8, No. 1; String Quintet, Op. 78, No. 1*. Valprias Cultural Center.
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Schubert: *String Quartets, Opp. 29, 125*. Il Nuovo Qr.
Schubert/Beethoven/Kuhlaut: *Works for flute and piano*. Marion, Rogé.
Schumann: *Symphones Nos. 2, 1*. Berlin StO, Suitner.
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DEUTSCHE GRAMMOPHON

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Beethoven: *Symphony No. 6; Choral Fantasy; Calm Sea and Prosperous Voyage*. Pollini; Vienna PO, Abbado.
Beethoven; Mozart: *Quintets for Piano and Winds*. Levine, Vienna-Berlin E.
Beethoven: *Violin Sonatas Nos. 4, 5*. Kremer, Argerich.
Bernstein: *A Quiet Place*. Ludgin, Brandstetter, Morgan, Craft, Eidekin, Ollmann, White; Austrian RSO, Bernstein.
Brahms: *Symphony No. 1*. Berlin PO, Karajan.
Brahms: *Symphony No. 2; Haydn Variations*. Berlin PO, Karajan.
Bruckner: *Symphony No. 7*. Vienna PO, Giulini.
Chopin: *Ballades (4); Barcarolle; Fantasia in F minor*. Zimerman.
Chopin: *Works for piano*. Bunin (debut).
Debussy: *Suite bergamasque; Pour le piano; Estampes*. Bunin (debut).
Debussy: *Iberia; La Damselle élue; Prélude à l'après-midi d'un faune*. London SO, Abbado.
Donizetti: *L'Elisir d'amore*. Bonney, Winberg, Weikl, Panerai; Teatro Comunale O&Cb, Ferro.
Fauré: *Pelléas et Mélisande; other orchestral works*. Boston SO, Ozawa. ▶

Fauré: *Violin Sonatas*. Mintz, Bronfman.

Giolini: *String Quartet. Schnabel:* *String Quartet No. 3*. LaSalle Qr.

Grieg: *Holberg Suite; Elegiac Melodies (2)*. **Tchaikovsky:** *Serenade for Strings*. Orpheus.

Grieg: *Peer Gynt (complete); Sigurd Jorsalfar (complete)*. Bonney, Von Otter, Malmberg; Gothenburg SO, Järvi.

Haydn: *Symphony No. 96; Sinfonia concertante*. CO of Europe, Abbado.

Haydn: *The Creation*. Blegen, T. Moser, Moll, Popp, Ollmann; Bavarian RSO&Ch, Bernstein.

Mahler: *Symphony No. 6; Adagio from Symphony No. 10*. Philharmonia O, Sinopoli.

Mendelssohn: *Sonatas for Violin and Piano*. Mintz, Ostrovsky.

Mendelssohn: *Overtures*. London SO, Abbado.

Mozart: *String Quintets K. 515, 516*. Bever, Melos Qr.

Mozart: *Serenade, K. 361*. Orpheus.

Mozart: *Piano Concertos, K. 456, 491*. Serkin; London SO, Abbado.

Mozart: *Symphonies Nos. 38, 39*. Vienna PO, Levine.

Mozart: *Symphonies Nos. 28, 33*. Vienna PO, Levine.

Mozart: *Violin Concertos Nos. 4, 5*. Kremer; Vienna PO, Harnoncourt.

Mozart: *Violin Sonatas, K. 378, 379, 380*. Perlman, Barenboim.

Mozart: **Beethoven:** *Bach Arrangements*. LaSalle Qr.

Mussorgsky: *Pictures at an Exhibition*.

Ravel: *Bolero; Rapsodie espagnole*. Berlin PO, Karajan.

Mussorgsky; **Rachmaninoff:** *Songs*. Burchuladze, Ivanova.

Prokofiev: *Romeo and Juliet (complete)*. Boston SO, Ozawa.

Rachmaninoff: *Piano Sonatas Nos. 1, 2*. Weissenberg.

Saint-Saëns: *Symphony No. 3. Dukas:* *The Sorcerer's Apprentice*. Preston; Berlin PO, Levine.

Saint-Saëns: *Introduction and Rondo Capriccioso; Havanaise*. **Sarasate:** *Carmen Fantasy*. **Chausson:** *Poème*. **Ravel:** *Tzigane*. Perlman; New York PO, Mehta.

Schoenberg: *Five Pieces for Orchestra, Op. 16*. **Webern:** *Six Pieces for Orchestra, Op. 6*. **Berg:** *Three Orchestral Pieces, Op. 6*. Berlin PO, Levine.

Schubert: *Piano Sonatas, D. 958, 959, 960; Piano pieces (3)*. Allegretto. Pollini.

Schubert: *Mass, D. 950*. Mattila, Lipovsek, Hadley, Pita, Holl; Vienna StOpCh, Vienna PO, Abbado.

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LEONARD BERNSTEIN

Schumann: *Symphony No. 3. Harris:* *Symphony No. 3*. New York PO, Bernstein.

Shostakovich: *Symphonies Nos. 6, 9*. Vienna PO, Bernstein.

Sibelius: *Symphony No. 2*. Vienna PO, Bernstein.

Sibelius; Dvořák: *Violin Concertos*. Mintz; Berlin PO, Levine.

Sinopoli: *Lou Salome, Suites Nos. 1, 2*. Popp, Carreras; Stuttgart RSO, Sinopoli.

Smetana: *Ma Vlast: Bartered Bride Overture, Dances*. Vienna PO, Levine.

Strauss: *Arnadne auf Naxos*. Tomowa-Sintow, Battle, Baltza, Lakes, Prev; Vienna PO, Levine.

Strauss: *Don Quixote; Till Eulenspiegel*. Meneses, Christ; Berlin PO, Karajan.

Stravinsky: *Pulcinella Suite; Dumbarton Oaks Concerto; Instrumental Miniatures (8)*. Orpheus.

Verdi: *Songs*. M. Price, Parsons. *New Year's Concert from Vienna, 1987*. Battle; Vienna PO, Karajan.

Verdi: *Songs*. M. Price, Parsons. *New Year's Concert from Vienna, 1987*. Battle; Vienna PO, Karajan.

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DYNAMIC

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Kodaly: *Duo for Violin and Cello; Capriccio for Cello Solo*. **Ravel:** *Sonata for Violin and Cello, Op. 7*. Bianchi, Ormerowski.

Rospigliosi: *Sonata for Violin and Piano*. **Ghedini:** *Sonata for Violin and Piano (world premiere recording)*. Gulli, Cavallo.

Rospigliosi: *Sonata for Violin and Piano*. **Ghedini:** *Sonata for Violin and Piano (world premiere recording)*. Gulli, Cavallo.

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Debussy: *Melodies, Vol. 2*. Rodde, Lee.

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Bach: *Brandenburg Concertos (6, arranged for piano duo by Reges)*. Von Hautf Duo.

Falla; Ginastera; Sor; Ruvo: *Songs*. Alonso, Ruvo.

Ginastera: *Complete works for cello and piano*. Natola-Ginastera, Rodriguez.

Ginastera; Ponce: *Piano Concertos*. Rodriguez.

Lecueni: *Songs*. Alonso, Ruvo.

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harpsichord by d'Anglebert). Gilbert.

Monteverdi: *Vespers*. Mellon, Laurens, Darras; Les Saqueboutiers de Toulouse, La Chapelle Royale, Collegium Vocale of Ghent, Herreweghe (2).

Rossini: *Bianca e Faliero*. Horne, Ricciarelli, Martinovich; London Sinfonietta, Prague PCh, Matl (3, 1).

Schütz: *Musikalische Exequien*. La Chapelle Royale, Herreweghe. *Songs to Poems by Baudelaire*. Lott, Johnson.

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Handel: *Arias for Senesino*. Minter; Philharmonia Baroque O, McGegan.

Vivaldi: *Flute Concertos*. See; Philharmonia Baroque O, McGegan.

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Dvořák: *Rhapsody for Orchestra, Op. 14; Overtures*. Slovak PO, Pešek.

Fortwängler: *Symphony No. 3*. RTBF SO, Walter.

Glière: *Symphony No. 2*. Slovak PO, Kosler.

Hummel: *Piano Concertos, Opp. 85, 89*. Chang; Hungarian StO, Pal.

Janáček: *Rákos; Rákoczy*. Soloists; Slovak PO&Ch.

Kalinnikov: *Symphony No. 1; Overture and Entr'actes from Tsar Boris*. Slovak PO, Gunzenhauser.

Meyerbeer: *Struensee (incidental music); Overtures*. Slovak PO.

Miaskovskiy: *Symphonies Nos. 7, 10*. Slovak PO, Halasz.

Miaskovskiy: *Symphony No. 8*. Slovak PO, Gunzenhauser.

Miaskovskiy: *Symphony No. 12; Silentium, Op. 9*. Slovak PO.

Pfitzner: *Piano Concerto*. Harden;



PETER SCHWARTZ

ANDRÁS SCHIFF

Budapest SO, Beissel.

Piornot: *Piano Works*. Chang.

Reinecke: *Symphony No. 1; King Manfred (incidental music)*. Rheinisch PO, Walter.

Rubinstein: *Symphony No. 5; Dmitri Donskoi Overture*. Slovak PO.

Schmidt: *Symphony No. 1. Notre Dame (Intermezzo and Carnival Music)*. Budapest SO, Halasz.

Schreckert: *Fantastic Overture; Ekkehard Overture; Opera Preludes*. Slovak PO, Seipenbusch.

Smolana: *Festive Symphony*. ORF SO, Zagrosek.

Spohr: *Symphonies Nos. 5, 8*. Slovak PO.

Spohr: *Symphony No. 4; Overtures to Jessonda, Faust*. Slovak PO.

Von Einem: *Violin Concerto; Rondo; Night on Bald Mountain*. Edinger; NDR SO, Hannover, Walter.

Von Schillings: *Violin Concerto*. Nishizaki; Slovak PO.

Zemlinsky: *Symphony No. 1; Das gläserne Herz*. Slovak PO.

Alphorn Concertos: Works by L. Mozart, Dätwyler, Farkas, Molnar; Slovak PO, Schneider.

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Bach: *English Suite; Toccata in D; Fantasy and Fugue in D minor*. Schiff.

Bach: *Sonatas for Violin and Keyboard*. Csaba, Kocsis.

Bach: *Suite No. 2 in B minor. Telemann: Concerto in E minor*. Capella Savaria.

Bach: *Works for harpsichord*. Spányi.

J.C. Bach; Hummel: *Bassoon Concertos*.

Bartók: *Sonata for Two Pianos; Two Pictures; Four Orchestral Pieces*. Kocsis, Ránki.

Beethoven; Brahms: *Clarinet Trios*. Berkes, Perényi, Kocsis.

Brahms: *Cello Sonatas (2)*. Perényi, Kocsis.

Brahms: *German Requiem*. Slovak PCh&O, Ferencsik.

Brahms: *Horn Trio. Beethoven: Sonata for Horn and Piano. R. Strauss: Andante for Horn and Piano*. Tarjáni, Takács-Nagy, Ránki.

Carissimili: *Jonas; Baltazar*. Pászthy, Zádori, Lax; Corelli CO, Párkai.

Charpentier: *Te Deum. Cavalli: Magnificat*. Kalmár, Tokody, Takács, Budai, Fülöp, Keönch, Ko-

váts, Begányi.

Cimarosa; Saixost: *Harpsichord Concertos*. Sebastyén; Franz Liszt CO.

Handel: *Sonatas for Violin and Harpsichord, Op. 1, Nos. 3, 6, 10, 12, 13, 14, 15*. Pauk, Sebastyén, Franck.

Handel: *St. John Passion*. Klietman, Kállay, Zádori, Verebics, Németh; Capella Savaria.

Haydn: *Il ritorno di Tobia*. Kalmár, Kincses, Takács, Fülöp, Bende; Budapest Madrigal Ch.

Haydn: *Secular canons*. Györ Girls' Ch, Szabó.

Haydn: *String Quartets, Op. 20. Tátrai Qr.*

Haydn; Mozart: *Horn Concertos*. Tarjáni.

Liszt: *Marches*. Wind E of the Hungarian People's Army.

Liszt: *Works for harmonium, cello, and piano*. Elekes, Perényi, Rohmann.

Liszt; Rossini; Schubert: *Piano works*. Jandó.

Monteverdi; Palestrina: *Choral works*. Györ Girls' Ch.

Mozart: *Church Sonatas, K. 274, 329, 145*. Ella; Corelli CO.

Mozart: *Divertimentos, K. 247, 251*. Franz Liszt CO.

Mozart: *Epistle Sonatas*. Ella; Corelli CO.

Mozart: *Gallimathias musicum, K. 32; Cassation in B, K. 99*. Franz Liszt CO.

Mozart: *Serenade in D; Two Marches*. Franz Liszt CO.

Mozart: *Sonatas for Two Pianos*. Ránki, Kocsis.

Mozart: *String Quintets (2)*. Takács Qr.

Mozart: *Trios for Two Clarinets and Bassoon*. Berkes, Mali, Hortobágyi.

Mozart; Brahms; Ravel: *Works for two pianos*. Ránki, Kocsis.

Schubert: *Piano Sonatas in A, D, 959, and A minor, D, 537*. Kocsis.

Schubert: *Piano Sonata in B flat, D, 960*. Kocsis.

Schubert: *Symphonies Nos. 4, 5*. Budapest FO, Fischer.

Schubert: *"Trout" Quintet. Schumann: String Quartets (3)*. Takács Qr, Kocsis.

Soleri: *Miserere à 8; Miserere à 12*. Budapest Madrigal Ch, Hungarian StO, Szekeres.

J. Strauss: *Overtures; Waltzes*. Budapest PO, Ferencsik.

Szomzői: *Water-Wonder. Reich: *Music for Preces of Wood. Mollat:* *Etude for Three Mirrors. Rzewski:* *Coming Together*. Group 180.*

Telemann: *Der geduldige Socrates*. Gregor, Farkas, Vámosy, Esswood, Klietmann, De Mey, Gáti; Capella Savaria, McGegan.

Vivaldi: *Flute Concertos*. Czidra, Har-sányi; Franz Liszt CO.

Vivaldi; Handel: *Laudate puern*. Capella Savaria.

Amelinda Ensemble: Works by Xenakis, Cage, Reich, Debussy.

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Gregorian Chants from Hungary, Vol. 5. Schola Hungarica.

Gregorian Chants from Hungary, Vol. 6. Schola Hungarica.

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Hungarian Dances from the 18th-19th Centuries. Capella Savaria.

József Réti Sings Opera and Concert Arias by Mozart. Réti; Budapest PO, Hungarian StO, Jancsovcics, Medveczky.

Music of Buda Castle. Camerata Hungarica.

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latti, Bach, Mozart, and Albinoni.

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Sylvia Sass Sings Arias by Boito, Gounod, and Mascagni. Sass; Budapest SO, Medveczky.

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Regor: *Piano Trio in E minor, Op. 102*. Ragaz, Häusler, Buttrick.

Spohr: *String Quartets in D, E flat*. Amati Qr.

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 Leonarda Records, P.O. Box 1736, Cathedral Station, New York, N.Y. 10025.

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- Adam:** *Giselle*. Bonyngé.
Albix: *Iberia; other piano works*. De Larrocha (2).
Bach: *Viola da Gamba Sonatas (arr. for cello)*. Harrell, Kipnis.
Beethoven: *Cello Sonatas (5)*. Harrell, Ashkenazy (2).
Beethoven: *Symphony No. 9*. Soloists; Chicago SO, Solti.
Bellini: *Norma*. Sutherland, Pavarotti, Caballé; Bonyngé (3).
Chopin: *Ballades (4); Fantasy in F minor; Barcarolle*. Bolet.
Dvořák: *Piano Concerto*. **Schumann:** *Konzertstück*. Schiff; Vienna PO, Dohnányi.
Giuliani: *Guitar concertos*. **Vivaldi:** *Guitar concertos*. Fernandez; English CO.
Handel: *Great Choruses from Messiah*. Chicago SO&Ch, Solti.
Haydn: *Symphonies Nos. 93, 99*. London PO, Solti.

- Lerner and Loewe:** *My Fair Lady*. Te Kanawa, Hadley, Irons; Maurer.
Mahler: *Symphony No. 10*. Berlin RSO, Chailly (2).
Massenet: *Manon Ballet*. Bonyngé (2).
Mendelssohn: *Songs Without Words*. Schiff.
Mussorgsky: *Pictures at an Exhibition; Night on Bald Mountain*. Montreal SO, Dutoit.
Rachmaninoff: *Piano Concerto No. 1; Rhapsody on a Theme of Paganini*. Ashkenazy; Concertgebouw O, Haitink.
Strauss: *Arabella*. Te Kanawa, Fontana; Royal OpO, Tate (3).
Stravinsky: *Petrouchka; Le Chant du Rossignol*. Montreal SO, Dutoit.
Tchaikovsky: *Piano Concerto No. 1; Rachmaninoff: Piano Concerto No. 2*. Bolet; Montreal SO, Dutoit.
Villa-Lobos: *Piano Music*. Ortiz.
Wagner: *Lohengrin*. Domingo, Norman; Vienna PO, Solti.
Spanish Favorites. Fernandez.
Volare: Popular Italian Songs. Pavarotti, Mancini.

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- Bach:** *Organ Concertos*. Hurlford.
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Berg: *Wozzeck*. Silja; Vienna PO, Dohnányi (2).
Brahms: *Piano Pieces, Opp. 117, 118, 119*. Lupu.

- Brahms; Mozart:** *Clarinet Quintets*.
Britten: *Beggar's Opera (highlights)*.
Britten: *Billy Budd*. Pears; Britten.
Bruckner: *Symphony No. 5*. Chicago SO, Solti (2).
Chopin: *Complete Piano Works*. Ashkenazy (13).
Chopin: *Polonaises*. Ashkenazy.
Chopin: *Les Sylphides*. Bonyngé.
Dobussy: *Preludes*.
Dvořák: *Symphonies Nos. 7, 8, 9*. Cleveland O, Dohnányi (2).
Elgar: *Pomp and Circumstance Marches*. Solti.
Franck: *String Quartet*. Fitzwilliam Q.
Gluck: *Orfeo*. Lovengar, Home; Solti.
Mozart: *Piano Concerto, K. 482*. Ashkenazy; Philharmonia O, Ashkenazy.
Mussorgsky: *Pictures at an Exhibition*. Chicago SO, Solti.
Ravel: *Daphnis et Chloé, Suite No. 2*. Montreal SO, Dutoit.
Rossini: *Favorite Overtures*. Chailly.
Scarlatti; Soler: *Sonatas*. De Larrocha.
Stravinsky: *Firebird; The Rite of Spring; Petrouchka*. Detroit SO, Dorati (2).
Stravinsky: *The Rite of Spring*. Detroit SO, Dorati.
Tchaikovsky: *Eugene Onegin*. Kubiak, Weikl; Solti.
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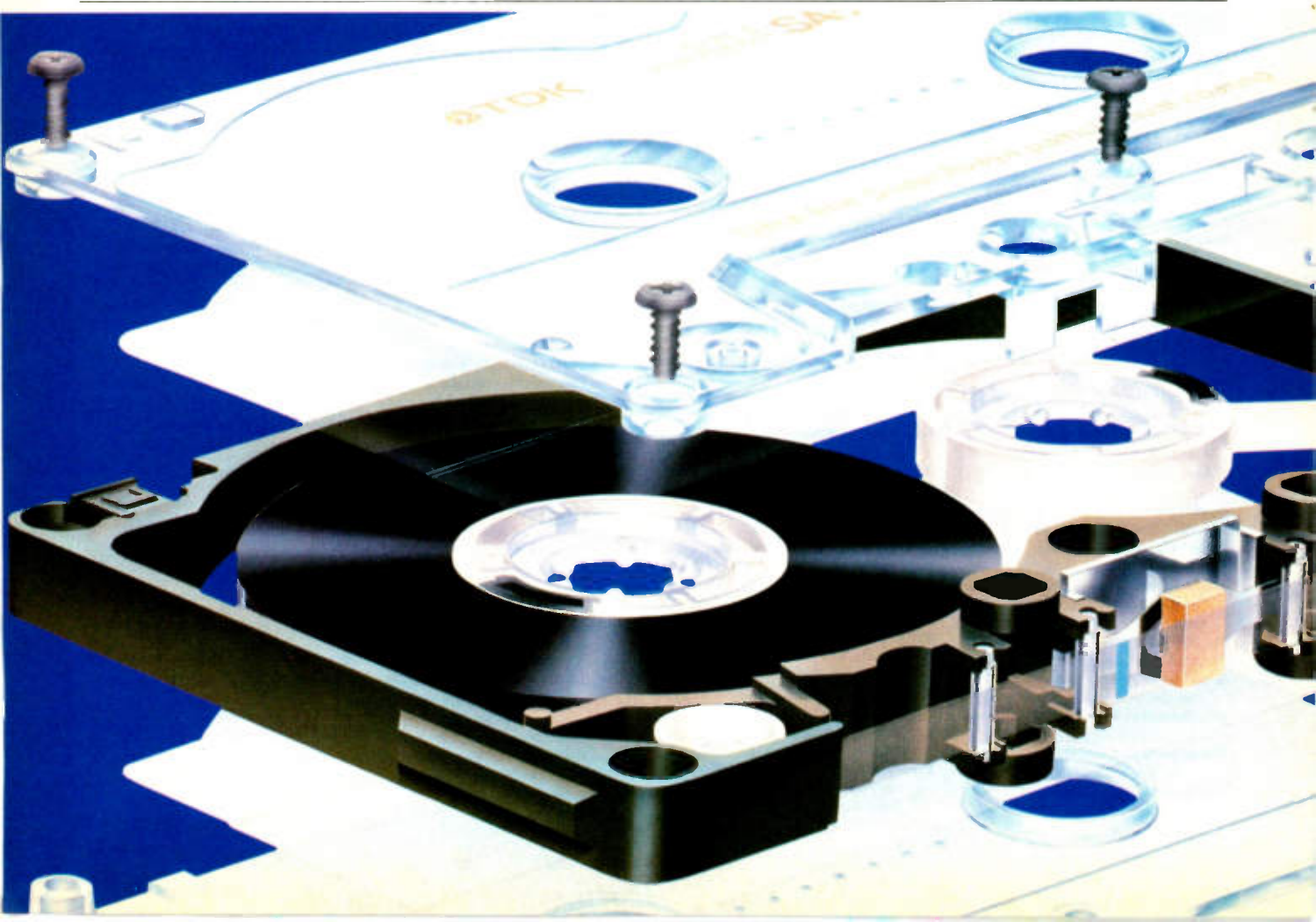
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Gershwin: *Rhapsody in Blue; Songbook*. Litton; Royal PO, Litton.
Gilbert and Sullivan: *The Mikado (highlights)*. English NOP, Idle.
Gilbert and Sullivan: *Ruddigore*. Sadlers Wells.
Gilbert and Sullivan: *H.M.S. Pinafore*. Sadlers Wells.
Mahler: *Symphony No. 2*. Valente, Forrester; London SO, Kaplan.



Menotti: *Amahl and the Night Visitors*. English NOP.
Rodgers and Hammerstein: *Carousel*. Royal PO, Gemignani.
Schubert: "Trout" Quintet. Nash E. *The Broadway Album*. Royal PO, Gemignani (2).
An English Christmas. Westminster Cathedral Ch. Hill.
Harpichord Masterpieces (arr. for piano). Aldwinckle.
A Little Night Music: Works by Mozart, Elgar, Greg. Serenata of London.
A Medieval Christmas. Pro Cantione Antiqua, Medieval Wind E, Brown.
Romance of Flute and Harp. Davies, Owen.
Segovia, Vol. 1.
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 MCA Classics, 445 Park Avenue, New York, N. Y. 10022.

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Brahms: *Variations on a Theme of Paganini*, Bks. 1, II. **Liszt:** *Six Grandes Etudes d'après Paganini*. Simon.
Chopin: *Piano Concertos (2)*. Simon; Hamburg SO, Beissel (a).
Debussy: *Images for Orchestra (3)*; *La Mer*. Luxembourg RSO, Froment (a).
Debussy: *Nocturnes (3)*; *Jeux*; *Prélude à l'après-midi d'un faune*. Luxembourg RSO, Froment (a).
Franck: *Violin Sonata*. **Ravel:** *Violin Sonata*. **Ysaye:** *Unaccompanied Sonata*. Kavakos, Epperson.

Handel: *Concerti Grossi, Op. 6, Nos. 1, 2, 6, 11*. Southwest German CO, Angerer (a).
Mozart; Kalliwoda: *Duos for Violin and Viola*. Duo Patterson.
Prokofiev: *Piano Concertos Nos. 2, 3*. Tacchino; Luxembourg RSO, Froment (a).
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Schubert: *Piano Music, Vol. 1*. Brendel (a).
Schubert: *Piano Music, Vol. 2*. Brendel (a).

Schubert: *Songs*. Opalach, Vallecillo.
Schumann: *Cello Concerto*. **Saint-Saëns:** *Cello Concerto**. **Bloch:** *Schelomo*. Varga; Westphalian SO, Landau; Luxembourg RSO, Froment* (a).
Schumann: *Piano Concerto; Introduction and Allegro; Concertstück, Op. 92*. Frankl; Bamberg SO, Furst (a).
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Mozart: *Symphony No. 40.* **Brahms:** *Symphony No. 2.* Berlin PO, Walter (m).

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Prokofiev: *Alexander Nevsky.* Van Sante; Radio PO, Stokowski.

Rachmaninoff: *Piano Concertos Nos. 2, 3.* Gieseking; Concertgebouw O, Mengelberg (m, l, h).

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Mozart: *Missa Brevis, K. 258; Missa Longa, K. 262.* Leipzig RCh, Dresden PO, Kege (CD).

Pauslet: *The Garden of Earthly Delights; Vienna Lusthaus.*

Prokofiev: *Le pas d'acier; Ode on the End of War.* U.S.S.R. Ministry of

Culture SO, Rozhdestvensky (CD).

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Stravinsky: *The Fairy's Kiss.* Scottish NO, Järvi (CD).

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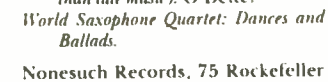
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Gluck: *Iphigénie en Tauride*.

Gluck: *La Danza la Corona*. Warsaw COp, Bugaj (2).

Haydn: *Concertos for Organ and Orchestra (3)*. Divertimento Salzburg, Haselboeck.

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Schubert: *Songs*. Lipovsek, Parsons.

Spoehr: *Faust*. Stamm, Wohlers, Schiml, Haldas, Fischer-Dieskau; St. Hedwig's Cathedral Ch, Berlin RSO, Bader (2).

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Spontini: *Olympie*. Varady, Totzyska, T. Tagliavini, Fischer-Dieskau, Fortuen, Becker; RIAS

CCh, Berlin RSO, Albrecht (2).

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Beethoven; **Czerny;** **Rossini;** **Strauss:** *Works for Horn and Piano*. Baumann, Hokanson.

Bizet: *Jeux d'Enfants*. **Fauré:** *Dolly Suite*. **Ravel:** *Ma Mère l'Oye*. Labbeques.

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Liszt: *Années de Pèlerinage, 2nd Year*. Brendel.

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Mendelssohn: *Symphonies Nos. 3, 4*. London PO, Bvchkov.

Mozart: *Piano Sonatas, K. 282, 283, 545*. Arrau.

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Mozart: *Eine kleine Nachtmusik; Serenata notturna; Divertimentos, K. 136, 137, 138*. Musici.
Mozart: *Gran Partita; Serenade in E flat*. Netherlands Wind E. De Waart.
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Mozart: *Requiem*. Vienna SO, Böhm.
Mussorgsky: *Pictures at an Exhibition*. Richter.
Mussorgsky: *Pictures at an Exhibition (two versions)*. M. Dichter; Rotterdam PO, De Waart.
Orff: *Carmina Burana*. Casapietra, Heistermann, Stryczek; Leipzig RSO&Ch, Kegel.
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Mozart: *Opera Overtures; Andante in C for Flute*. Amsterdam Guitar Tr.
Rimsky-Korsakov: *Scheherazade (arr. for two guitars)*. K. Yamashita, N. Yamashita.
Rodrigo: *Fantasia para un Gentilhombre*. **Brouwer:** *Concerto Elegáico (world premiere recording)**. Brean; Brouwer*.
Schubert; Schumann: *Works for Clarinet and Piano*. Stoltzman, Goode.
Schumann: *Piano Quintet; Piano Quartet*. Ax, Cleveland Qr.
Shostakovich: *Gadfly (suite); Hamlet (suite)*. Srebrier.

Shostakovich: *Symphony No. 10*. St. Louis SO, Slatkin.
Vivaldi: *The Four Seasons (arr. for solo recorder, strings, and continuo)*. Petri; Guildhall Festival O.
Art. Original Soundtrack Recording. Caruso, Price, Domingo, Bjoerling, others.
A Ceremony of Carols. Philadelphia Singers, Korn.
Marching Along: Famous Marches by Williams, Sousa, Verdi, Elgar, and others. St. Louis SO, Slatkin.

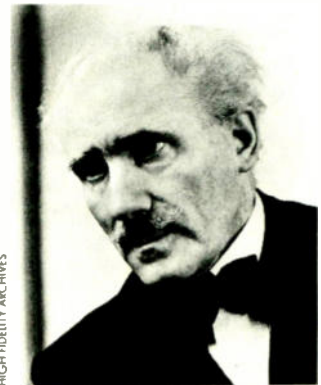
CD reissues

Bach: *Sonatas and Partitas (complete)*. Heifetz (2).
Bach: *Double Concerto*. Heifetz.
Beethoven: *Symphony No. 9*. Chicago SO, Reiner.
Beethoven: *Symphonies Nos. 5, 8; Leonore Overture No. 3*. NBC SO, Toscanini.
Beethoven: *Violin Sonatas (complete)*. Heifetz (3).
Beethoven: *Piano Concertos Nos. 1, 4*. Dorfmann, R. Serkin; NBC SO, Toscanini.



JASCHA HEIFETZ

Mozart: *Symphonies Nos. 39, 40, 41*. NBC SO, Toscanini.
Mozart: *Violin Concertos Nos. 4, 5*.
Bach: *Chaconne*. Heifetz; London SO, Sargent.
Rachmaninoff: *Piano Concertos Nos. 1, 4; Rhapsody on a Theme of Paganini*. Rachmaninoff; Philadelphia O, Ormandy, Stokowski.
Rachmaninoff: *Sonata No. 2; Piano Concerto No. 3; Prelude in G*. Horowitz; RCA SO, Reiner.
Rossini: *Overtures*. NBC SO, Toscanini.
Scarlatti: *Sonatas*. Horowitz.
Schubert: *Fantasia; Impromptus; Sonata in B flat, Op. Posth*. Rubinstein.
Schubert: *Symphonies Nos. 8, 9*. NBC SO, Toscanini.
Schumann: *Piano Concerto. Liszt: Piano Concerto No. 1*. Rubinstein; Chicago SO, Giulini; RCA SO, Wallenstein.
Schumann: *Kreisleriana; Fantasia, Op. 17*. Rubinstein.
Schumann: *Sonata No. 3; Humoreske; other works*. Horowitz.
Strauss: *Don Quixote; Death and Transfiguration*. NBC SO, Toscanini.



ARTURO TOSCANINI

Brahms: *Symphony No. 1; Double Concerto*. NBC SO, Toscanini.
Brahms: *Double Concerto*. **Mozart:** *Sinfonia concertante*. **Bach:** *Double Concerto*. Heifetz, Piatigorsky, Primrose, Friedman.
Brahms: *Symphony No. 3*. **Elgar:** *Enigma Variations*. NBC SO, Toscanini.
Brahms: *Symphony No. 2; Variations on a Theme of Haydn; Tragic Overture*. NBC SO, Toscanini.
Debussy: *La Mer*. **Saint-Saëns:** *Symphony No. 3*. **Thomas:** *Overture to Mignon*. NBC SO, Toscanini.
Dvořák: *Piano Quartet in E flat*.
Fauré: *Piano Quartet in C minor*. Rubinstein, Guarneri Qr.
Dvořák: *Piano Quintet in A; Quartet in F, Op. 96 (American)*. Rubinstein, Guarneri Qr.
Dvořák; Walton: *Cello Concertos*. Piatigorsky; Boston SO, Munch.
Franck: *Prelude, Chorale, and Fugue*.
Bach: *Chaconne (arr. by Busoni)*.
Liszt: *Sonata in B minor*. Rubinstein.
Kerngold: *Die Tote Stadt*. Kolo, Neblett (2).
Lalo: *Symphonie espagnole*. **Saint-Saëns:** *Introduction and Rondo Capriccioso*. **Sarasate:** *Zigeunerweisen*. **Chausson:** *Poème*. Heifetz.
Mendelssohn: *Symphonies Nos. 4, 5*.
Schumann: *Manfred Overture*. NBC SO, Toscanini.



ANDRÉ PREVİN



DAVID ZINMAN

Tchaikovsky: *Symphonies Nos. 4-6*. Concertgebouw O, Haitink (2).
The Last Night of the Proms. Norman; BBC SO, C. Davis.
 Philips Classics, 810 Seventh Avenue, New York, N.Y. 10019.

PIERRE VERANY

(Distributed by Harmonia Mundi, U.S.A.)
 oil CD

Verdi *I Vespri Siciliani*. Domingo, Arroyo, Raimondi, Milnes; New Philharmonia O, John Alldis Ch, Levine (3).

Verdi *Aida*. L. Price, Domingo, Bumbry, Milnes; London SO, John Alldis Ch, Leinsdorf (3).

Verdi *Falstaff*. Valdengo, Stich-Randall, Nelli, Elmo; NBC SO, Toscanini (2).

Verdi *La Traviata*. Caballé, Domingo, Milnes; RCA Italiana OpO&Ch, Prêtre (2).

Verdi *La Traviata*. Albanese, Merrill, Pearce; NBC SO, Toscanini (2).

Verdi *Un Ballo in Maschera*. Nelli, Pearce, Turner, Merrill; NBC SO, Toscanini (2).

Arias and Neapolitan Songs. Gigli. *Con Amore*. Domingo.

Duets. L. Price, Domingo. *Encores*. Horowitz.

Horowitz Plays Chopin, Vol. 1. *James Galway Plays Mozart*. *Jascha Heifetz Plays Music of French Masters: Works by Saint-Saëns, Fauré, Debussy, Ravel, Ibert, and Poulenc*.

Jorge Bolet: Live at Carnegie Hall. *The Man with the Golden Flute*. Galway. *Rachmaninoff Plays Rachmaninoff*.

RCA Records, 1133 Avenue of the Americas, New York, N.Y. 10036.



LAZAR BERMAN

SAYDISC

(Distributed by Qualiton Imports)

Bach; Handel; Haydn *Music for Two Flutes*. Preston's Pocket.

Beethoven *Sonatas for Violin and Piano, Op. 24; Op. 30, No. 2*.

Haydn *Piano Sonatas (on early pianos)*. Burnett.

Mozart *Piano Quartets*. Burnett, Salomon Qr.

Schumann; Schubert *Works for fortepiano*. Burnett.

Weber; Schumann *Works for clarinet*. Hacker, Burnett.

A Tapestry of Carols. Prior; Carnival Band.

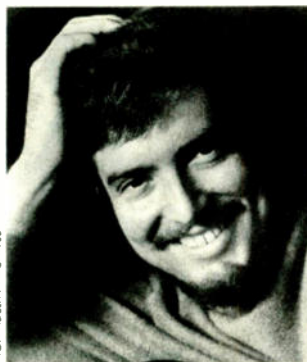
Concord of Sweet Sounds: Works for flute and guitar by Bach, Beethoven and others. Beznusiuk, North.

Diversions from the Fairer Sax: Quartets for saxophone by Dubois, Patterson, and others.

Evening Song: Chinese Classical selections. Jing Ying Soloists.

In Nomine: Music for consort of viols by Tallis, Byrd, Tye, and others. Fretwork.

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Hindemith *Viola Concertos*. Schmid; Bavarian RSO, Kubelik, Heger.

Hoffmann *Symphony in E flat; Jes-sonda Overture; The Merry Musicians Overture; Quintet for Harp and Piano*. Nordmann, Joste; Berlin RSO, Zagrosek, Bader.

Mendelssohn; Berman; Kramert *Clarinet Concertos*. Klöcker, Wandel; Southwest German RSO, Tamayo.

Mozart *String Quartets Nos. 19, 22*. Kolisch Qr. (m, h).

L. Mozart *Serenade in D for Trumpet, Trombone, and Orchestra*. Touvron, Becquet; Berlin RIAS Sinfonietta, Sebestyen.

Schoeck *Massimilla Doni*. Mathis, Prottschka, Hermann, Stamm; Köln RSO, Albrecht (2).

R. Strauss; Grieg *Early Symphonies*. Bavarian RSO, Rickenbacher.

Tchailkovsky *Piano Concerto No. 1 (original version)*. Berman; Berlin RSO, Temirkanov.

Alexander Zemlinsky Conducts: Overtures by Mozart, Beethoven, Rossini, Smetana, Floutow, Weinberger. Berlin PO, Zemlinsky (m, h).

Virtuoso Trombone Concertos: Works by Bloch, David, Alschavsky, Rosin; Berlin RSO, Lajovic.

SILVA SCREEN

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Barry *High Road to China (film score)*. Belgrade SO, Pascan.

Rosenthal *Anastasia, the Mystery of Anna (film score)*. Munich SO, Rosenthal.

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Beethoven *Cello Sonatas, Op. 5**; *Six String Quartets, Op. 18*; *Symphonies Nos. 1-3*. Slowik*. Weaver*. Smithsonian Qr; Smithsonian CO (performed on original instruments) (6).

Smithsonian Collection of Recordings, 955 L'Enfant Plaza, Suite 2100, Washington, D.C. 20560.

SOUTHERN CROSS

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Hornert *Krull (film score)*. London SO, Horner.

Resonant *Heart of the Stag (film score)*. New Zealand SO, Rosenman.

Sculthorpe *Irkanda II; Lament; Port Essington; Sonata for Strings*. Australian CO.

Works by Australian Film Composers: Dreyfuss, May, Moetzing, Smeaton, Walker. Various orchestras and conductors.

SUPRAPHON

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Brockner *String Quintet*. Malý, Kocian Qr.

Dussek *Piano Sonata in F minor; Les Adieux; Melodic Etudes Nos. 3, 5, 11*. Panenka.

Dvořák; Suk *Serenades for Strings*. Suk CO, Suk.

Fibich *Šárka*. Děnoltová, Příbyl, Randová, Zitek; Brno StPO, Štych.

Novák *South Bohemian Suite; Slovak Suite*. Czech PO, Vajnar.

A. Reicha; J. Reicha *Piano Concerto. Viola Concerto*. Kvapil, Špeline; Brno StPO, Vronský.

Saint-Saëns *Morceau de concert. Schumann* *Concertstück*. **F. Strauss** *Horn Concerto*. **Weber** *Horn Concertino*. Tyllär; Czech PO, Neumann.

Scriabin *Piano Concerto; Poem of Ecstasy; Rêverie*. Ohlsson; Czech PO, Pešek.

Voříšek *Symphony in D; Variations de Bravoure; Introduction et Rondeau Brillant*. Krajný; Prague CO, Pařík.

Old Czech Marches and Dances. Czech PO, Neumann.



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Beethoven *Missa Solemnis*. Atlanta SO&Ch, Shaw.

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Fauré; Duruflé *Requiems*. Atlanta SO&Ch, Shaw.

Grofé *Grand Canyon Suite*. **Gershwin** *Catfish Row*. Cincinnati

Pops O, Kunzel.

Mendelssohn *Octet; String Quartet No. 2*. Cleveland Qr, Meliora Qr.

Mozart *Symphonies Nos. 36, 38*. Prague CO, Mackerras.

Prokofiev *Alexander Nevsky; Lieutenant Kijé (suite)*. Los Angeles PO, Previn.

Tchailkovsky *Swan Lake (excerpts); Sleeping Beauty (excerpts)*. Royal PO, Mackerras.

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Dyson *Songs with chorus*. Mackie; Royal College of Music Ch, Royal PO, Willcocks.

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THE CD SPREAD

MINI-REVIEWS OF THE LATEST COMPACT DISCS

BY THOMAS L. DIXON, PAUL MOOR, K. ROBERT SCHWARZ, AND TERRY TEACHOUT

SATIE PIANO MUSIC: CICCOLINI

THIS ANTHOLOGY OF ERIK SATIE'S PIANO music is not a compilation from Aldo Ciccolini's mid-1970s Satie series for Angel but a collection of new digital recordings made by Pathé Marconi between 1983 and 1986. The performances are cool and witty, the selection of material satisfying, the liner notes by Felix Aprahamian informative, and the running time generous. Ciccolini is joined by Gabriel Tacchino for the four-hand suites *Trois morceaux en forme de poire* and *La belle excentrique*. An ideal CD for Satie enthusiasts. Playing time: 70:57. (Angel CDC 47474.)

T.T.

FAURÉ BARCAROLLES: JEAN-PHILIPPE COLLARD

JEAN-PHILIPPE COLLARD'S FINE 1970 PATHÉ Marconi recording of the Fauré Barcarolles, once available in the United States on Connoisseur Society records and later on In Sync cassettes, has now turned up on an Angel CD. Collard's playing of these subtle works is wonderfully lucid, and one hopes that this CD will be followed by reissues of Collard's equally distinguished recordings of the Fauré Nocturnes and the complete chamber music with piano, not to mention his superlative 1982 song recital with Frederica von Stade. Playing time: 55:16. (Angel CDC 47358.)

T.T.

BEETHOVEN PIANO CONCERTOS: PERAHIA; CONCERTGEBOUW

BEETHOVEN'S FIRST TWO PIANO CONCERTOS are imbued with the spirit of Mozart, not only in their formal structure, but in their thematic substance as well. Written for the composer himself to perform, both concertos are graced with Beethoven's own cadenzas. Although the first movement of Concerto No. 1 has three alternative cadenzas, the finale contains only a brief cadential flourish. On Murray Perahia's new recording, that flourish is introduced by a newly discovered cadenza passage taken from one of Beethoven's sketchbooks. Whatever doubts one may have about the addition, the new cadenza, which includes a stormy passage in the minor mode, blends smoothly with the existing material.

Perahia's sharply etched articulations and sparkling agility heighten the grace and elegance of Beethoven's virtuosic writing. But Perahia does not settle for mere me-

chanical dexterity. Not a phrase of music goes by without some inflection of dynamics, timbre, or tempo, although the playing remains well within the bounds of the style. Occasionally, one wishes for less poetry and more muscle; Perahia's way with Beethoven is consciously understated, and he tends to downplay the music's visceral power. Yet his caressing, silken tone, so perfectly matched with the warm, suave sound of the Concertgebouw Orchestra, provides a sensuous joy all its own. Playing time: 69:59. (CBS MK 42177.)

K.R.S.

BEETHOVEN CONCERTOS, SONATA: RUBINSTEIN

IN THE SECOND VOLUME OF HIS MEMOIRS, Artur Rubinstein offers a critique of his many concerto recordings: "... I made several recordings of each, every time trying to play them better. But the first versions remained the best." Given the length of Rubinstein's recording career, which extended from the late 1920s well into the 1970s, that remark is part truth and part fiction. However, in the case of this Beethoven concerto cycle, recorded during the 1960s with Erich Leinsdorf and the Boston Symphony and recently reissued by Red Seal on three CDs, Rubinstein may have been right. Of course, there is always the antique allure of his mid-1940s performance of the Third Concerto, with Arturo Toscanini; there is also the enormous charm and spicy vitality of his 1947 Fourth Concerto with Beecham—perhaps, everything considered, my favorite Fourth.

But when it comes to the whole cycle, Rubinstein was quite right: He never at any time equalled the results he and Josef Krips achieved when they set down all these concertos late in 1956. It seems that RCA has chosen the middle path for their CD reissues: While they passed by the best, they also were wise enough to omit the final cycle (with Barenboim), which does Rubinstein's memory no service at all. Thus we have at hand these perfectly good performances, easy to recommend to the generally curious and clearly necessary for the Rubinstein collector. But what a pity it is that the best Rubinstein Beethoven may never find its way onto CD. On the other hand, if the current pattern of reissues by Red Seal continues and the label launches a midpriced CD line, it may yet happen.

Finally, Rubinstein's performance of the

Moonlight Sonata illustrates perfectly the advice once given by a critic to Vladimir Ashkenazy in a review, to the effect that all Chopin should be played as though written by Beethoven and all Beethoven should be played as though written by Chopin. If you agree with that assessment, then this sonata performance is among the great versions. Playing time for Concerto No. 1 and Sonata in C sharp minor (RCA 5674-2): 52:39. Playing time for Concertos Nos. 2 and 3 (RCA 5675-2): 64:35; Playing time for Concertos Nos. 4 and 5 (RCA 5676-2): 71:16. T.L.D.

NIELSEN FOURTH: BIRMINGHAM, RATTLE

MANY PEOPLE UNFAMILIAR WITH CERTAIN Scandinavian works tend to equate them in advance with Nordic climates and national personality clichés. Of Carl Nielsen's six wonderful symphonies, the Fourth in particular reminds us that warm-weather countries have no patent on passion. Nielsen, profoundly troubled, composed it during the massacres of World War I, when he wrote to a friend: "... National feeling, which up to now has been taken as something high and beautiful, has become a kind of spiritual syphilis, which has eaten up the brain and grins out through the empty eye sockets in crazed hatred." He applied the work's subtitle (*The Inextinguishable*) not to his symphony but to "the elemental will to life," as the printed score puts it.

On this new Angel EMI CD, Simon Rattle and the City of Birmingham Symphony Orchestra do well with the violence of the outer movements and with the pathos of the Adagio, but Rattle's overall reading leans toward the academic, as does Esa-Pekka Salonen's with the Swedish Radio Symphony (CBS MK 42093). Both versions must yield to Herbert von Karajan's exciting performance with the Berlin Philharmonic (DG 413 313-2). That version, though, gives you only the symphony, a mere 38:26 of music, which is downright miserly, particularly on an expensive CD. The CBS version provides Nielsen's *Helios* Overture as a bonus, and the remaining space on the EMI disc introduced me to Nielsen's charming little (8:26) tone poem about how Syrinx managed to cold-cock Pan when he started pawing the ground—one of Nielsen's rare attempts at program music, and a successful one. Playing time: 45:04. (Angel EMI CDC 47503 2.)

P.M.

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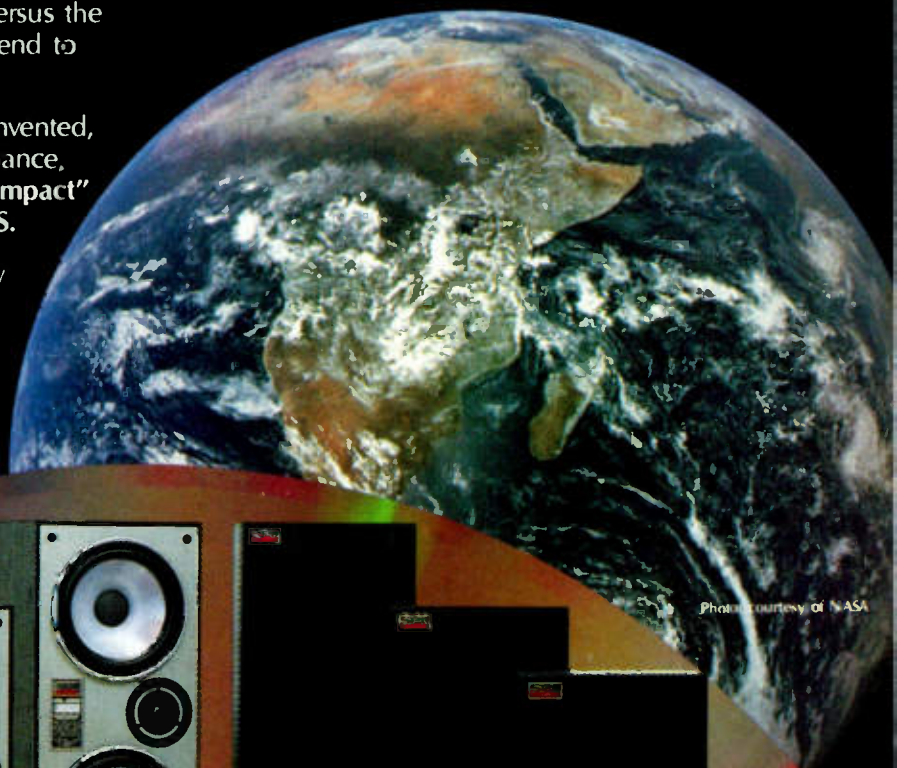
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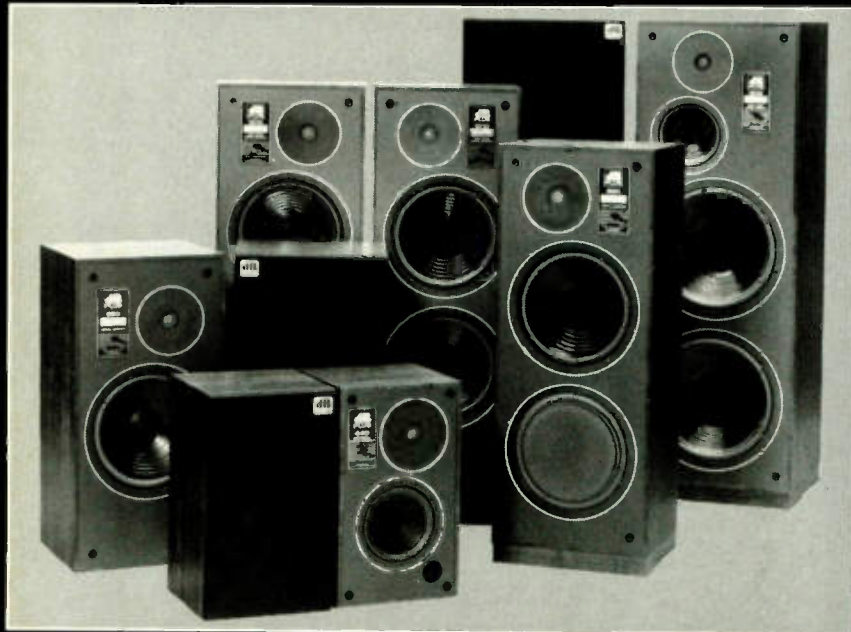




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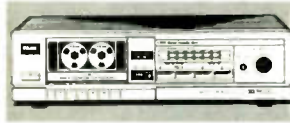
**THERE'S NO STOPPING HIM—
AND HE'S GOT MINI-REVIEWS
ON HIS MIND!**

What is this? Has Ken gone mad and fired all his writers? Has Citizen Murdoch stolen them away? Fear not, readers: Ken has merely given them a summer vacation in order to have his say on a stack of pop releases. So sit back for a section-long editorial, as it were, covering LPs, cassettes, Compact Discs, and videocassettes. Next month, the writers return for BACKBEAT's second CD special on both pop and jazz recordings. Meanwhile, turn to page 78 for the Richardson Report.

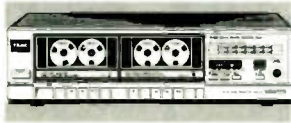
BY KEN RICHARDSON



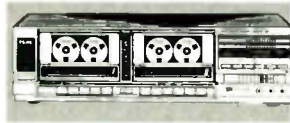
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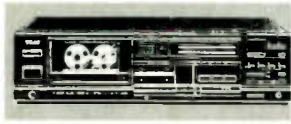
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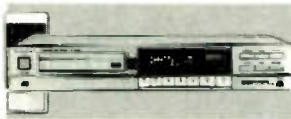
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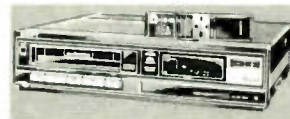


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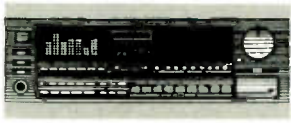
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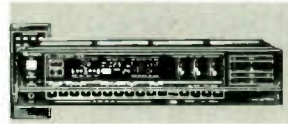
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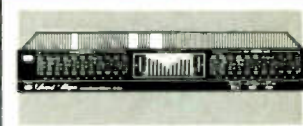


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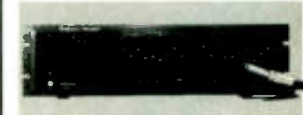


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WHITNEY HOUSTON:

🎵 **Whitney.** Arista AL 8405.

THE HISTORY: *WHITNEY* IS THE FIRST POP album by a female artist to debut at *Billboard's* No. 1. The story: *Whitney* is a sophomore slump. It's not really Whitney Houston's fault, though. Blame producer Narada Michael Walden, who's responsible for seven of the 11 cuts—and who seems more concerned with the studio than with letting Houston shine on her own merits. When Walden's gone, things are fine. "Didn't We Almost Have It All" and "You're Still My Man," produced by Michael Masser ("The Greatest Love of All," "Saving All My Love for You"), are the grand ballads, Houston reaching the stratosphere with ease. And her voice punches hard in "Love Will Save the Day," the one track produced by hip-hopper Jellybean Benitez (what if *he* had done the whole LP?). Still, there's nothing as arresting as "How Will I Know"; Houston needs better material. As a singer, the lady *is* a champ. But is she destined to leave that role behind for the Hollywood route of Barbra Streisand or, God forbid, Diana Ross? I hope her managers/producers/svengalis don't sell her short. That goes for Houston herself, too.

ROGER WATERS:

🎵 **Radio K.A.O.S.** Columbia CK 40795.

READERS OF THIS MAGAZINE WILL BE AMUSED to learn that this concept album is about a young man who can "receive radio waves directly, without the aid of a tuner." Fans of Pink Floyd/Roger Waters will be disappointed to learn that the story is silly, the music a drag.

THE DOORS:

🎵 **Live at the Hollywood Bowl.**

📺 MCA Home Video 80592.

THE MOST SURPRISING THING ABOUT THE hour-long *Live at the Hollywood Bowl*, filmed on July 5, 1968, is that it didn't show up earlier, for this is solid video material. The technology of the Eighties has helped, though, in that the original stereo tapes have been digitally mixed and mastered. The camerawork is rather static, relying on a medium-shot of Jim Morrison's right profile and a long-shot of the band on the immense stage, but at least there's a minimum of Sixties psychedelia. Morrison is rather static, too, and at times he appears monumentally out of touch—yet just when you think he's about to nod off, he jumps up maniacally or crashes to the floor. Throughout, his voice is flaw-

less. Of the other Doors, drummer John Densmore is a marvel, holding together the drifting music with vigor. (Guitarist Robby Krieger, on the other hand, is as likely to play a clumsy solo as a fluid one.) And the material? Along with "When the Music's Over," "The End," and selections from *The Celebration of the Lizard*, all milked for every drop of melodrama, there are strong versions of "Alabama Song," "Back Door Man," "Five to One," "Moonlight Drive," "Horse Latitudes," "Spanish Caravan," "The Unknown Soldier," and "Light My Fire." Nonfans may be mystified by the performances in *Live at the Hollywood Bowl*. The devout will be entranced.

PHIL MANZANERA:

🎵 **Guitarissimo.** EG EGCD 69.

HERE'S A MODEL "BEST OF" COLLECTION. Roxy Music guitarist Phil Manzanera has culled tracks from five solo LPs (1975's *Diamond Head* through 1982's *Primitive Guitars*) and, with the help of new sound effects and fades, has arranged them into different suites. The Compact Disc version includes a fifth suite, adding four tracks and 17 minutes to the recording, thereby bringing the CD totals to 17 tracks and 72 minutes. The music, meanwhile, is exquisite. If you're expecting Eddie Man Zanera, go elsewhere: Phil's guitar-playing is more suggestive than primitive, and his composing is firmly in the front seat. Phil having written or co-written all but one song. (That one track, the Beatles' "Tomorrow Never Knows," gets an evocative treatment.) Recommended without reservation—as is the original *Diamond Head*, Manzanera's masterpiece.

HEART:

📺 **Bad Animals.** Capitol 4XJ 12546.

"ALONE" IS A GORGEOUS BALLAD, BELTED BY Ann Wilson in her best Heartache. Who really made this album, though? Starship? Journey? And who *wrote* most of this album? Not the Wilson sisters. I really should stop caring by this point—but honestly, there was a time when Heart made some splendid music, reaching a zenith with the electric/acoustic sides of the nearly decade-old *Dog and Butterfly*. Listening to guitarist Howard "Least" take the band through these synth-metal lullabies makes me long for the great lost Roger Fisher solo album. Young fans will no doubt lap it up, but the rest of us are old enough to know better.

FIRE TOWN:

🎵 **In the Heart of the Heart Country.**

📺 Atlantic 81754-1.

I WANTED TO WRITE ABOUT THIS ALBUM WHEN it was first released late last year on the independent Boat label, but I never had the chance. Now that the LP has just been picked up by Atlantic and is therefore more readily available, I'm here to say that *In the Heart of the Heart Country* is one of the first records you should buy this month. Fire Town comes from Madison, Wisconsin, and the



MANZANERA: FOR A TOUR OF HIS SUGGESTIVE PLAYING, LOOK NO FURTHER THAN THE 72-MINUTE CD VERSION OF "GUITARISSIMO."

quartet's melodic vocals and natural guitars are as beautifully Midwestern as the pattern plowed in the field on the inner sleeve. This may be a critics' band, but it's meant to be enjoyed by the people.

WARREN ZEVON:

Sentimental Hygiene.

Virgin America 90603-1.

ROLL CALL IN THE STUDIO: BOB DYLAN, George Clinton, Don Henley, Tony Levin, David Lindley, R.E.M., Brian Setzer, Waddy Wachtel, Jennifer Warnes, Neil Young. These singers and players, bolstered by bombs-away production, sure make this LP sound good. But Warren Zevon has always succeeded on the material he writes, not the company he keeps, and on *Sentimental Hygiene* he succeeds only part of the time. Best are "The Factory," Zevon's Mellencamp, and "Reconsider Me," a poignantly autobiographical love song. Elsewhere, Zevon's rock is too often two-chord and his lyrics ordinary. I miss the revolving subtlety and bite of *Warren Zevon* and *Excitable Boy*. Still, this is not awful by any means, and Zevon is worth cheering for, so enjoy the highlights of this LP and look forward to the next one.

ROSANNE CASH:

King's Record Shop. Columbia FC 40777.

THE MEMORY OF LINDA RONSTADT'S 1974 LP *Heart Like a Wheel* is growing dim, so it's comforting to have an album like *King's Record Shop* around to restore one's faith in that animal called country-rock. Whether she's singing the country of "Tennessee Flat Top Box" or the rock of "Rosie Strike Back," Rosanne Cash knows this is the best way to express both her sorrow and her resolution—especially when she takes up the pen herself and contributes two of the LP's best songs, "The Real Me" and "Somewhere Sometime," longing softly, longing hard. There's also ace material from John Hiatt, Benmont Tench, and husband Rodney Crowell. Credit the ace production to Crowell, too, though he could have toned down the drums a mite. She's a star on the country charts, but Cash deserves even wider respect on the strength of this album.

THE RAVI SHANKAR PROJECT:

Tone Mamas. Private Music 2016-2.

SYNTH PLUS SITAR EQUALS SYNTHITAR. RAVI Shankar's ten compositions are dull, whether New Age or Old Indian. Participants include George Harrison, Ray Cooper—and Al Kooper? Unimpressive CD sound.

THE SAINTS:

All Fools Day. TVT 2111.

OLD PUNKERS NEVER DIE, THEY JUST CALM down—and in the case of the Saints, still make valid records. On *All Fools Day*, the Australian band's eighth album, acoustic guitars are as prominent as electrics, and the melodic strains of current American music are side by side with Who-style crashes. I can do without the strings and horns, though,



MONTROSE: NO-NONSENSE ATTACK RECALLS HIS CLASSIC HARD-ROCK RECORDS OF THE SEVENTIES, BUT RIFFS NEED WORK.

and singer Chris Bailey often sounds like Mumbles. Yet the whole is full and vibrant, and this CD has excellent sound. The journey from "I'm Stranded" may have been long but not misguided.

WHITESNAKE:

Whitesnake. Geffen GHS 24099.

MONTROSE:

Mean. Enigma ST 73264.

WAYSTED:

Save Your Prayers. Capitol ST 12538.

TESLA:

Mechanical Resonance.

Geffen GHS 24120.

WHITESNAKE, FORMED IN THE LATE SEVENTIES by vocalist David Coverdale after the breakup of the Mark IV Deep Purple, is finally making it in the States with the top-notch "Still of the Night," a riff-laden metal monster. And Coverdale seems to have worked a little depth into his voice. But overall, guitarist John Sykes is an amateur soloist, veteran drummer Aynsley Dunbar lurches without flair, and producers Mike Stone and Keith Olsen dress up the lackluster material in a Thunder-of-the-Gods noise that only induces headaches. Buy the single.

Ronnie Montrose has some resumé: After playing guitar for Van Morrison, Boz Scaggs, and Edgar Winter, he formed his own bands, working with Sammy Hagar in Montrose and with Mitchell Froom in Gamma. Solo projects came next, including flirtations with fusion, and now it's back to the hard rock of his eponymous band. *Montrose* (1973) and *Paper Money* (1974) remain classics of the genre, and *Mean* shares their crisp production and no-nonsense guitar attack. Songs are weaker, though. The new Montrose is a good band that could be a killer band with just a bit more time spent in the riff-writer's workshop.

Bassist Pete Way hails from UFO, whose five LPs from 1974's *Phenomenon* to 1978's *Obsession*, all with Michael Schenker on guitar, are among the most intelligent hard-rock recordings ever made. Way has now enlisted second-string UFO axeman Paul Chapman for Waysted, a band that thankfully draws on UFO's sense of melody. But Chapman still fails to impress. I've got it: Let's get Pete Way and the aforementioned Ronnie Montrose together and call 'em Waymont. Or—dare I say it?—Pete Rose.

(CONTINUED ON PAGE 83)

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in "Wrapped Around Your Finger" (though I wish the action weren't in that surrealistic slow-motion). "Synchronicity II," with its decadent-future set and hopeless Andy Summers posturings, is overdone, but Godley and Creme rebound with "Don't Stand So Close to Me '86," an imaginative retrospective of the band's video career. This is a fun package, and Top Forty music doesn't get any better than this.

FLEETWOOD MAC:

☉ **Tango in the Night.** Warner Bros. 25471-1. THANK GOD LINDSEY BUCKINGHAM IS STILL struggling with love. Out of his pain comes, if not great art, at least great eccentric material for Fleetwood Mac to work over. His "Big Love," "Caroline," "Tango in the Night," and "Family Man" are the superb standouts here. Christine McVie, meanwhile, is still head-over-heels, and her sunniness is attractive in "Everywhere" and "Little Lies." As for Stevie Nicks, let's just say that she's a very long way from the voice and pen of "I Don't Want to Know." All in all, the sterling-sounding *Tango in the Night* is not nearly as over the hill as it might have been.

SCRUFFY THE CAT:

① **Tiny Days.** Relativity 88561-8158-2. ACCORDING TO A RELATIVITY PRESS RELEASE, the Compact Disc version of *Tiny Days* "doubles as a handy shaving mirror." Cute. But why aren't the LP-sleeve lyrics reprinted in the CD booklet? And why isn't this 35-minute disc filled out with *High Octane Revival*, the Boston band's 1986 EP? That said, this is American guitar pop of the first order. But save your bucks, CD fans, and buy the EP and the LP.

PETE TOWNSHEND:

☉ **Another Scoop.** Atco 90539-1 (2).

ROGER DALTRY:

☉ **Can't Wait to See the Movie.** Atlantic 81759-1.

THE WHO:

☉ **Two's Missing.** MCA 5712.

ANOTHER SCOOP HAS SOME REMARKABLE FINDS: "Girl in a Suitcase," a tuneful *Who by Numbers* leftover; "Brooklyn Kids," an affecting story of loneliness and rape; the standard "Driftin' Blues," with Pete Townshend playing his best acoustic; and "Never Ask Me," a dark ballad intended for *Who Are You*. Most of the remaining previously unreleased material is unnecessary. And besides "Call Me Lightning," an adorable surf from '64, the early versions of familiar material include only one gem, "Pinball Wizard," which on one acoustic and one electric is as tough as the final version. Yet this is the same rough cut originally offered on the flexidisc in Richard Barnes's *Who* biography *Maximum R&B*. And on this second double-dip of demos and rejects, we've even got a demo of a reject: "Long Live Rock" (the song first appeared on *Odds and Sods*, remember?). Which means that Townshend is a great writer but, here, a lousy editor. Single album, please.

Roger Daltrey has a problem: Whenever he tries to sing Who-like music without the Who, the result invariably sounds shopworn. Where else to go? Well, for one cut on *Can't Wait to See the Movie*, to L.A. and producer David Foster, where the result is slick studio music. The other tracks are more of the same, and Daltrey is mixed down in the busy production, possibly to mask a failing voice. Not recommended.

The 14 tracks on *Two's Missing* include four never-before-released cuts, but they're no great shakes: Even the live versions of "My Wife" and "Goin' Down" shuffle aimlessly. The other numbers are U.S. B-sides or U.K.-only recordings, and whether we're talking instrumental with barks ("Dogs, Part 2"), instrumental with stings ("Wasp Man"), or covers by numbers ("Under My Thumb," "I'm a Man," "The Last Time," "Daddy Rolling Stone"), we're talking not very good. John Entwistle himself slams most of the stuff in his liner notes. This is novelty Who for fanatic completists only.

AL GREEN:

☐ **Gospel According to Al Green.** Guiding Image G 115.



BE YOU PAGAN OR BE YOU MONK, YOU'LL ENJOY *Gospel According to Al Green* if you're a fan of singing, for this 90-minute videocassette of Robert Mugge's 1984 film is a glorious testament to the human voice—and how, in the person of Green, it can almost transcend the human. There's plenty of gospel in Green's riveting musical sermon to his church congregation, as well as in concert footage with an equally stunning Green fronting his crack band. There's also plenty of looking back, as producer Willie Mitchell and Green tell stories about the early days. Best moments: the incredulity Green still feels when recounting the "grits incident" that ultimately changed his life; the sadness in Mitchell's face as he remembers when the singer left pop for gospel after their eight-year association. We also get a quick update of "Let's Stay Together" and several priceless sequences of Green singing along to his own electric guitar. I'll let the Reverend himself sum things up: "I took what I learned from rock 'n' roll: the ingenuity, the class, the charisma, the

steps, the movement, the hesitation, the way to be curious—very curious. . . . You take all of this, and you use it to your best advantage, but it doesn't give you the *fire*. Either you have the fire or you don't have the fire: the *spiritual* fire." This intelligently shot, exceptionally recorded video certainly burns.

PETER WOLF:

☉ **Come As You Are.** EMI America ST 17230.

THIS IS SOME TREBLE-FEST: LOUD GUITARS, loud snares, loud horns. Indeed, the production's "Sonic Digital Weaving" just gives everything more dirty volume. Fans of the J. Geils Band will love the material, too: non-stop in-your-face rock, with minor traces of the cool funk of the admirable but freshman-fumbling *Lights Out*. Even the ballads charge. Peter Wolf's vocals are second to none, of course. Enough description, crank it up!

JUDY MOWATT:

☉ **Love Is Overdue.** Shanachie 43044.

NOT TO BE CONFUSED WITH JODY WATLEY—though on three of these tracks, producer Dexter Wansel (Patti LaBelle, the Jacksons) comes close to turning former Bob Marley vocalist Judy Mowatt into just another funkette, especially during an ill-advised bouncy cover of "Try a Little Tenderness." Concentrate instead on the seven other cuts, including UB40's "Sing Your Own Song," Marley's "Screwface," and three numbers written or co-written by Mowatt herself. Mowatt produced all seven of them, too, and this lady obviously knows what she's doing in her soulful brand of reggae. Above it all, she sings like a tropical carillon. Stirring.

THE WOODENTOPS:

☉ **Well Well Well . . .** Upside UCD 60003-2.

YEAH, THESE GUYS AND ONE GAL AREN'T BAD. Play 'em in the morning, when their rock 'n' roll urgency will get you going better than a large OJ. At times, they get lost in droning self-importance ("Steady Steady," "Cold Inside," "Plutonium Rock"), but they usually throw enough beat around to shake you up. This, by the way, is not the Woodentops' critically acclaimed Columbia debut: That was *Giant*. This is a collection of the group's U.K. singles, and since the band doesn't believe in Roy Thomas Baker perfection, the CD sound is no revelation, despite digital remastering. We do get four additional non-EP cuts in this "unabridged" program, three of them bracing.

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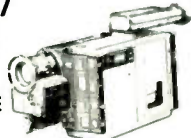
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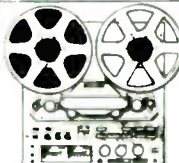
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start is Steppenwolf's "Born to Be Wild," mimed with such fury that you'll swear the band is playing live. The real treat of this tape is that all ten remaining bands *are* playing live. In the top rank are Black Sabbath storming through "Paranoid," T. Rex chugging away to "Jeepster," Free slamming out "All Right Now" (with Paul Kossoff terrific on guitar), and the Grateful Dead—yes, the Grateful Dead—rolling down a spirited "One More Saturday Night." Not far below are Jimi Hendrix's metallic "Wild Thing," Yes's earnest "I've Seen All Good People," Mungo Jerry's do-it-yourself-sound-effects stomp "In the Summertime," the Byrds' ringing "So You Want to Be a Rock and Roll Star," and Ike and Tina Turner's tape-stopping "Proud Mary." Only Santana's "Black Magic Woman" falls short, hampered by bad sound. Here's hoping that MTV and Vestron run off a few more collections: I've been monitoring the network lately, and there's more gold in them than vaults.

LISA LISA AND CULT JAM:

① **Spanish Fly.** Columbia CK 40477.

MOST OF THIS COMPACT DISC IS DROWNING IN techno-funky bleeps and blurts, so go directly to "Head to Toe," "Someone to Love Me for Me," and "Lost in Emotion," three hot pieces of swinging soul. Lisa Lisa could use more of such material to show off the authority of her honeydew voice.

BALAAM AND THE ANGEL:

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BALAAM AND THE ANGEL, EH? A HOOT OF A name. Can't argue with the driving music, though: U2, in a way, with fuller guitars and extra pop. Narrower horizons, too, and that's a relief. Three brothers from Britain with no synthesizers, and that's a relief, too. Give 'em a listen.

JOHN FARNHAM:

① **Whispering Jack.** RCA 6300-2.

THIS IS THE BEST-SELLING DOMESTIC ALBUM in Australia's history: sextuple platinum and counting, No. 1 for more than four months. John Farnham has a grab-your-ears voice that belies his previous vocal chores with the Little River Band, but this LP's generic big-singer material and production make him sound as royally hollow as Gino Vannelli. Farnham wrote just one song, "Let Me Out," and it's a shade more involving than the album's other catchy track, the eight-week-Aussie-chart-topper "You're the Voice." As for the rest: G'day.

THE JIMI HENDRIX EXPERIENCE:

① **Live at Winterland.** Rykodisc RCD 20038.

THIS IS MORE THAN THE USUAL MINI-REVIEW, but then the recording at hand is more than the usual barrel-scraping. *Live at Winterland*, taken from performances in October 1968, is a CD-only release—with a playing time of 71:45—on the CD-only label Rykodisc, and according to the company, "These are the

first authorized mixdowns from the original multitrack recordings, which have been carefully transferred to digital 24-track, then digitally mixed and mastered. The result is a sound with dynamics and clarity rarely found in live recordings from this era."

Well, yes and no. The CD opens with "Fire," where Jimi Hendrix's guitar and vocals, Noel Redding's bass, and Mitch Mitchell's drums all hit hard. It's especially nice to hear the depth of the bass sound. Trouble is, that's *all* you hear from Redding: a general sound, with little definition. On the following track, "Manic Depression," this problem infests all three instruments and effectively quashes the liner notes' trumpeting of the song as previously unreleased in any live version. Original masters may have been substandard, and ongoing amplifier malfunctions that Hendrix refers to may have clouded things, but I suspect that producers Alan Douglas and Chip Branton—the same team that brought us the played-through-socks production of *Band of Gypsies 2*—are partly responsible for the occasionally lousy sonics.

But in the end, the point is moot. For when it comes to CD, as Mark Moses has written, the best-sounding disc "cannot make a dull performance anything more than a well-textured dull performance." And therein lies the real problem: *Live at Winterland* is sloppy Hendrix, complete with second-rate flash and outright mistakes. Hendrix sounds bored, weary, or simply out there in both his stage patter ("We're trying to pick up the pieces with these speakers—but hell, I don't give a damn") and his singing ("If my baby don't love me no more/Lord, I know that her big fat sister will—let me say it right—her sister will"). Maybe the speaker troubles destroyed his mood. (They just about destroy mine during the never-before-available-live "Spanish Castle Magic," where a very audible buzz chases Hendrix's vocals on the verses.) Yes, there are moments, like the metal workout in "Tax Free," a once hokey track from the posthumous LP *War Heroes*. But overall, this is a set of—well, manic depression.

Rykodisc has taken pains in its packaging, but whereas the CD booklet folds out to form a handsome reproduction of the original concert poster, it folds back into a collection of liner notes fit for a fanzine. And the notes are loaded with errors: Hendrix's patter is misquoted, guest Jack Casady's surname is twice misspelled "Cassady," and the writers of "Tax Free" are given as "Hansson and Karlsson" on one page and "Hansen and Carlsen" on another. Some of the "care" in transferring the recording should have been given to assembling the booklet. A lot more care should have been used in choosing the music. Think this is a good "Red House"? The version on *Hendrix in the West* is twice as fast yet three minutes longer, and the band smokes. As does nearly the entire sharp-sounding, unaccountably deleted LP. Now *that's* live Hendrix worthy of CD.

LARRY FAST/SYNERGY:

① **Metropolitan Suite.** Audion SYNCD 204.

WENDY CARLOS:

① **Beauty in the Beast.** Audion SYNCD 200.

SUZANNE CIANI:

① **The Velocity of Love.** RCA RCD 1-7125.

LARRY FAST, WHO HAS RECORDED ELECTRONIC music under the name Synergy since the mid-Seventies and who has served as synthesist to Peter Gabriel and other stars throughout the Eighties, is the overseer of the new Audion Recording Company, a label "devoted to state-of-the-art electronic instrumental music, the first wave of the Next Age." Unfortunately, his own *Metropolitan Suite* is mostly average symphony-orchestra simulation, reminiscent of okay scores for okay action movies.

Much better is labelmate Wendy Carlos's *Beauty in the Beast*, a fascinating soundscape whose stops include Tibet, Bali, and Africa.

This recording was reviewed in depth by James Wierzbicki in the *classical* music section of HIGH FIDELITY's July issue; BACKBEAT readers are sure to have less of a problem with Carlos's actual compositions, so diverse are the sounds she creates. BUT BACKBEAT readers must heed Wierzbicki's warning about the CD pressing: My copy of *Beauty in the Beast*, like his, is terribly pocked with skips.

Least satisfying of these three CDs is Suzanne Ciani's RCA recording *The Velocity of Love*. Ciani's credits include "musical electronic arrangements" for *The Stepford Wives* and scores for TV and radio commercials representing everyone from A&P to UPS, and her work here is but a small step forward. "Slowly, slowly, with the velocity of love." Well, the childish romanticism and unimaginative electronics of this album are the kinds of things that give love a bad name.

JOHN LENNON:

① **Menlove Ave.** Capitol SJ 12533.

SIDE 1 OFFERS FIVE ROCK 'N' ROLL OUTTAKES, notable only for "Rock 'n' Roll People," a song John Lennon gave to Johnny Winter (whose versions on *John Dawson Winter III* and *Captured Live* are definitive). Side 2 is stronger, offering *Plastic Ono Band*-style demos of five *Walls and Bridges* tracks. But any Lennon archivist-fan should also own *Walls* itself, an unjustly underrated LP.

SLY AND ROBBIE:

① **Rhythm Killers.** Island 90585-1.

I LISTENED TO THIS ON THE FOURTH OF JULY and—for one side, at least—didn't care that I missed the fireworks. Drummer Sly Dunbar and bassist Robbie Shakespeare, joined by Bootsy Collins, Nicky Skopelitis, Bernie Worrell, Henry Threadgill, and more characters in producer Bill Laswell's troupe,

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Yamaha Electronics Corp. (29)

6660 Orangethorpe Ave.
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714/552-9105
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CORRECTION

Our July listing for Mitsubishi was in error. The correct address and phone number are 800 Biermann Ct., Mt. Prospect, Ill. 60056, 312-298-9223. We apologize for any inconvenience this may have caused.



LAURA LEVINE

SMYTH: THOUGH HER SCANDAL-LESS VOICE STILL TUGS, ON "NEVER ENOUGH" THERE'S NOT ENOUGH DANGER IN HER DRAMA.

have made a rhythm thriller. The Ohio Players' "Fire" sounds funkier than ever, and in "Boops (Here to Go)" you can revel in rap that doesn't sound like it came from a comic book. "Let's Rock," closing Side 1, does what it says, meanly. After all that, Side 2's "Yes We Can Can," "Rhythm Killer," and "Bank Job" are somewhat samey. That first side is worth your attention, though.

NELSON ANTON:

Saga. TAO Realization Music 002-1. (Ama Cohen, Rua Montes Claros, 1359, Apt. 1202, Belo Horizonte, Minas Gerais, Brazil CEP 30.310.) BRAZILIAN FLUTIST NELSON ANTON IS A rarity: a New Age artist who freely accepts the tag. Maybe it's because he composes and plays that kind of music with scarcely any pretension. Anton is no flute virtuoso, and his material rarely sounds Brazilian, but anyone who has written tributes to both Claude Debussy and Ian Anderson and who has been expelled from Brazil's National School of Music on the grounds of rebellion is all right with me. *Saga* is a work in six movements, here sprightly, there menacing. Au-

ton describes his music as "enigmatic meanders of the flute," and whether you play it in the background or the foreground, it sounds quite nice.

RICHARD MARX:

Richard Marx. Manhattan ST 53049. RANDY MEISNER AND TIMOTHY B. SCHMIDT ARE here, but this doesn't sound like the Eagles. Prairie Prince and Fee Waybill are here, too, but this certainly doesn't sound like the Tubes. Listeners to AOR radio may think this sounds like Joe Walsh, but that's true for only one cut, "Don't Mean Nothing," which blatantly rips off the opening riff to "Life's Been Good"—and Joe's playing the damn thing himself! Ain't *that* peculiar. Back to our story: In voice and material, Richard Marx actually sounds most like Kenny Loggins, for whom he co-wrote "What About Me" and "Crazy." Marx also has written for Chicago and sung for Lionel Richie. Put them all together, in the guise of Marx, and you've got fodder, nothing more. "After I met Lionel," Marx has said, "I immediately knew L.A. was where I had to be." See ya.

PATTY SMYTH:

Never Enough. Columbia CK 40182.

"THE WARRIOR" WOULD HAVE SOUNDED LIKE a camp-out if it weren't sung by Patty Smyth, whose sweet-with-a-touch-of-rasp voice never fails to tug. Likewise, the title track of *Never Enough* has pomp a-plenty, yet Smyth's determination makes me want to shout along. Unfortunately, not even Patty can redeem most of this pedestrian material, played in pedestrian fashion. (Three Hooters, Magic Dick, and Anton Fig all sound uncharacteristically plain.) Beware of bad synthesizers, particularly. Smyth needs more danger in her drama: Listen to her *Owww!* at the beginning of "Tough Love" and you'll get an idea of her true potential. How about some covers of husband Richard Hell?

PIANOSAURUS:

Groovy Neighborhood. Rounder 9010.

"(A FUNNY THING HAPPENED ON THE WAY TO the Toystore," indeed: The three members of Pianosaurus decided they would buy a toy guitar, a toy piano, and a toy drum kit and make a career out of playing them. So *Groovy Neighborhood* sounds . . . groovy, like John Sebastian in grade school. In truth, toy guitarist Alex Garvin's material is far from childish, but I suspect that Pianosaurus is best appreciated in a nightclub, where the sight of this concept no doubt adds to the enjoyment of the sound. In the meantime, why not release this plastic-instrument music on dollar-a-disc kiddie vinyl suitable for plastic record players? That seems fair.

VARIOUS ARTISTS:

Highs of the Sixties.

Warner Special Products 27607-2.

HERE WE HAVE 20 TRACKS, ALL DIGITALLY remastered, on a CD-only release with a playing time of more than 50 minutes. Lots of hits, to be sure—but soundwise, things are pretty hit-and-miss. In the former department, listen for such details as the nutty guitars on the Electric Prunes' "I Had Too Much to Dream Last Night" and the keen castanets on the Marketts' "Out of Limits." More important, notice how the digital format clarifies the myriad elements of three songs that are fully revealed as masterpieces of popcraft: the Left Banke's "Walk Away Renee," the Knickerbockers' "Lies," and the Beau Brummels' "Laugh Laugh." Other songs, however, are dumb on CD. Blue Cheer's "Summertime Blues" and Sam the Sham & the Pharaohs' "Woolly Bully" both offer bright vocals sailing miles above murky instruments, and the Young Rascals' "I Ain't Gonna Eat Out My Heart Anymore" is badly fragmented; this stuff belongs jammed on a 45, to be heard through an old car-radio speaker. Also, Iron Butterfly's "In-a-Gadda-da-Vida" (the short version) is inexcusably buried under tape hiss. Final note: I'm pleased to report that the Kingsmen's "Louie Louie" still sounds like it came from a garage—and still features completely unintelligible lyrics. Bluto would be proud.

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