

Stereo Review

DECEMBER 1986 \$1.95

**FIRST TESTS:
CARVER'S AMAZING
LOUDSPEAKER**

**ALL ABOUT
EQUALIZERS**

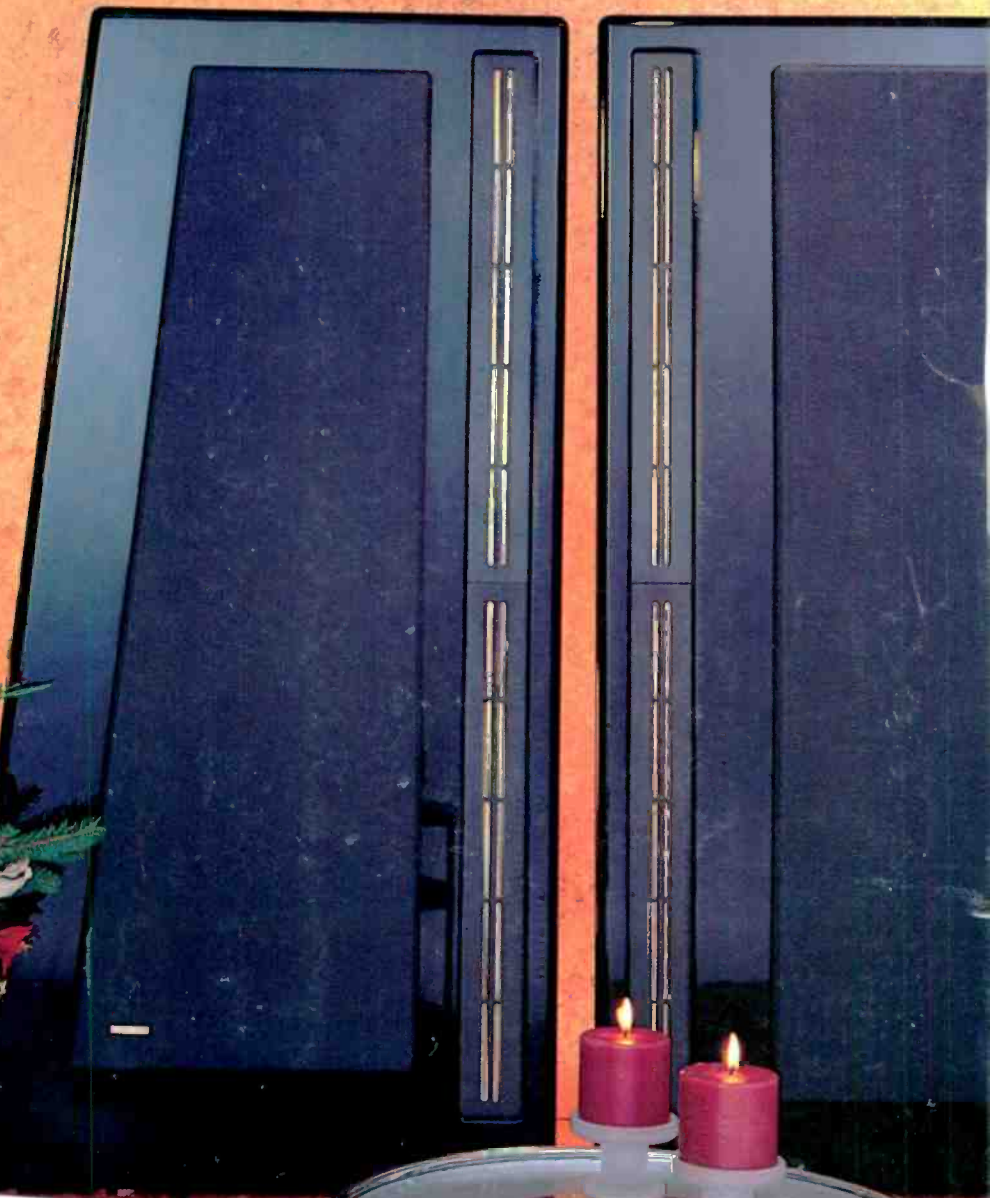
**HOW TO USE DOLBY
NOISE REDUCTION**

HOLIDAY GIFTS

THE JUDDS

**HIRSCH-HOUCK
LAB TESTS**

...AND MORE



MR. DAVID BUCHANAN
3104 DUNLEITH CT
LOUISVILLE KY 40228
12*PJ
430492 BCH #10<095 741J JANSO
#2598*****5-DIGIT 40228



Not Evolutionary,

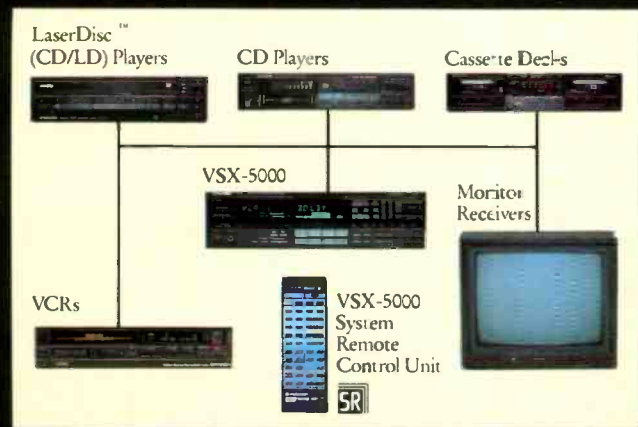
Pioneer's Revolutionary Audio/Video Receiver.

Necessity. The mother of invention. And now from Pioneer comes a revolutionary invention made necessary by the rapidly merging technologies of digital audio and high quality video.

Meet the Pioneer VSX-5000.

A new product that should be first on your list when you decide to get into a home A/V system, be it simple or complex.

A new product that takes all your audio and video components and consolidates them with complete central control.



A new product that gives you the same true Dolby Surround[®] Sound you find in first-class movie theatres. As well as a choice of other surround sounds like "Stadium" for viewing spectator sports or concerts, or "Studio" for watching Jazz or Rock performances. There's even Simulated Stereo that adds ambience to mono sound sources, and a Dynamic Expander that adds impact and excitement to compressed music sources.

A new product that optimizes high quality signals like CD and LaserVision while sharply upgrading the fidelity of lesser-quality signals like mono VCR sound, analog records or standard broadcast TV.

A new product with a built-in video enhancer

and video noise filter to get maximum sharpness and quality out of VCRs, LaserVision players, video monitors or projection TVs. And Pioneer's unique split-screen video format lets you enhance picture quality during recording or playback while comparing the processed picture side-by-side with the original.

The features just listed make the VSX-5000 an incredible value. Yet you get even more. The VSX-5000 is a complete 100-watts per channel^{***} receiver with Pioneer's exclusive Non-Switching[™] Type II Vari-Bias[™] circuitry to eliminate transistor switching and reduce intermodulation distortion. A Quartz-PLL AM/FM tuner includes innovations like a visual alphanumeric readout that identifies your favorite station formats—"Jazz," "Rock," or by station call letters. And a presettable 3-position Acoustic Memory remembers how you like your bass and treble set for particular music styles, or different audio sources.

The VSX-5000 includes Pioneer's "SR"[™] system. It stands for System Remote and assures complete compatibility of each Pioneer SR product assembled into your system. In the VSX-5000, you get a 59-function SR remote control unit that gives you unheard-of control and flexible operation right from your armchair.

By now you can see just how indispensable the VSX-5000 is to a complete audio/video center. There's practically nothing it won't do to improve audio and video. And when the future brings new components to the market, the VSX-5000 will be ready to handle them too.

The revolutionary Pioneer VSX-5000. The heart and soul of your audio and video system. Both today. And tomorrow.

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Revolutionary.



 **PIONEER®**

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STEREO DEMANDS THE REAL SOUND OF AMERICA'S BEST-SELLING SPEAKERS

Realistic® brand speakers from Radio Shack are the first choice of music lovers who know no compromised sound when they hear it . . . and solid-value craftsmanship when they see it. Every Realistic

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Stereo Review



PAGE 99



PAGE 87



PAGE 94

Cover: Carver's Amazing Loudspeaker; see the special test report on page 94. Flowers by Cultured Design Ltd.

BULLETIN.....	5	TECHNICAL TALK.....	30
EDITORIAL.....	8	CLASSICAL MUSIC.....	129
LETTERS.....	10	POPULAR MUSIC.....	153
NEW PRODUCTS.....	15, 198	VIDEO REVIEWS.....	183
BOOKS.....	18	1986 EDITORIAL INDEX.....	194
AUDIO Q&A.....	22	THE HIGH END.....	200

EQUIPMENT

CAR STEREO	26
In the lab and on the road with the Aiwa CTX-500II receiver/tape player <i>by Julian Hirsch and Michael Smolen</i>	
HIRSCH-HOUCK LABS EQUIPMENT TEST REPORTS	45
Magnavox CDB-650 Compact Disc Player, page 45	
Polk SDA-2A Speaker System, page 52	
Nakamichi SR-3A AM/FM Receiver, page 59	
Dual CS 5000 Turntable, page 68	
Soundcraftsmen Pro-Power Four Amplifier, page 73	
Sansui D-705 Cassette Deck, page 78	
EQUALIZERS	82
Shape the sound of your system to fit your room, your recordings, and your taste <i>by Michael Smolen</i>	
HAPPY HI-FI HOLIDAYS	87
Christmas gifts for audiophiles	
CARVER'S AMAZING LOUDSPEAKER-	94
A special test report <i>by Julian Hirsch</i>	
THE DOLBY SYSTEMS	99
How to get the most out of the Dolby circuits in your equipment <i>by E. Brad Meyer</i>	
AUDIO'S NEAR MISSES	102
Well, it <i>seemed</i> like a good idea . . . <i>by Ian G. Masters</i>	

MUSIC

THE JUDDS	92
"Somebody said our story was better than a Judith Krantz novel." <i>by Alanna Nash</i>	
BEST RECORDINGS OF THE MONTH	109
Sweethearts of the Rodeo, Horowitz's Studio Recordings, Paul Simon, Liszt's <i>Via crucis</i>	
RECORD MAKERS	196
The latest from Peter Gabriel, Larry Fast, Kiri Te Kanawa, John Fogerty, Debbie Harry, Gian Carlo Menotti, and more	

VOL. 51 No. 12 DECEMBER 1986 (ISSN 0039-1220)

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Take it to the Max

Advanced Sansui technology brings you the optimum in power and control

Take Sansui's years of experience in creating state-of-the-art audio equipment, add advanced technologies like Sansui's X-Balanced circuitry for noise- and distortion-free sound, and you've got an amplifier that is sure to bring out the best in your music, especially with digital programs.

The Sansui B-2102 X-Balanced Stereo Power Amplifier provides 200 watts of power per channel minimum RMS, power to spare even when it comes to reproducing the wide dynamic range of Compact Discs. And because it's an X-Balanced amplifier, grounding



problems that can plague performance by causing noise and distortion are eliminated. What you get is sound that is wider in frequency response and more life-like to the ear.

The Sansui C-2102 Stereo Control Amplifier is the perfect partner for the B-2102, with its many input and output connectors. It lets you take the bright and beautiful sound of the B-2102 power amp and control it for superb versatility.

Power and control—put the two together and you've got the means to take your music to the max.



C-2102

- 2-band parametric equalizer
- Bi-directional dubbing between three decks
- Low-noise, high-gain DC phono equalizer for MC, high-output MC, and MM cartridges

B-2102

- X-Balanced Amp Type I
- 680 watts per channel dynamic power (2 ohms)
- 200 watts per channel driven into 8 ohms from 20 to 20,000Hz with no more than 0.003% total harmonic distortion
- Liquid crystal display

CIRCLE NO. 44 ON READER SERVICE CARD



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SANSUI ELECTRIC CO., LTD. 1-1-1 ZUMI 2-CHOME, SUGINAMI-KU, TOKYO 168, JAPAN

by Christie Barter and William Burton

CAR AUDIO

Ford has added a CD player to the Ford JBL Audio System in the Lincoln Town Car, claiming that it's the first factory-installed CD player in the American automotive industry. Midway in the 1987 model year, the Ford JBL system will be an available option on the Lincoln Mark VII. . . . The Delco-GM/Bose Music system has been made available on the Pontiac Bonneville and Chevrolet Camaro. It will be standard equipment on the new Cadillac Allante. The General Motors cars that have the Delco-Bose system now total sixteen models.

MCA CLASSICS

MUSIC NOTES

MCA has re-entered the classical-record field with fifteen digital recordings selling for \$8.98 to \$9.98 on LP's and cassettes. Their CD's have no list price but cost dealers about \$2 less than the usual wholesale price. . . . "The Complete Key-note Collection," released by PolyGram, is a twenty-one-record set of mid-1940's jazz that has been digitally remastered. Containing 334 tracks, the set lists for \$209.58. . . . Philips is transferring some of its Mercury Golden Imports to CD, including Tchaikovsky's *1812 Overture*, which was certified Gold by the RIAA in 1963. . . . Verve is releasing a series of live digital recordings made at the Vine St. Bar & Grill in Hollywood. Due early in 1987 are albums by Nina Simone and Marlena Shaw. . . . Nashville executives are looking for a new tag for the crossover country music exemplified by Dwight Yoakum and Steve Earle. Leading contenders: "Mutt Music" and "New Edge."

TECH NOTES

Harman America, marketer and distributor of Harman Kar-

don products, JBL consumer speakers, and Triad tape, has reached an "agreement in principle" to purchase Epicure/Concord, makers of EPI home speakers and Concord car stereo equipment and importer of Thorens turntables. . . . Sumiko will be importing a full line of electronic products from Cambridge Audio in England, including a CD player to list for about \$3,000. . . . Despite filing under Chapter 11 of the bankruptcy laws, New England speaker manufacturer Genesis is doing "just fine," according to president George Samuels. . . . Richmond, Indiana, will be the site of a Sanyo compact disc research and manufacturing facility, which should begin pressing CD's in June 1987. . . . On January 1, 1987, a tough anti-gray-market law goes into effect in California, requiring retailers to inform consumers that they may be buying gray goods and to point out lack of warranty, English instructions, and so forth.

WHEN YOU CARE ENOUGH

Hallmark Cards is offering a Christmas album, "Listen to the Joy," for \$2.95 with any Hallmark Christmas purchase. Available on LP or tape, the album features the Vienna Choir Boys backed by the London Symphony Orchestra, with Plácido Domingo as soloist. Included among the titles is *The Gift of Love*, a new song written by the tenor's son, Plácido Domingo, Jr.

FLASH FROM JAPAN

This year's Tokyo Audio Fair was full of "prototypes" of digital audio tape decks, but manufacturers will not be selling the machines until next spring at the earliest. Pressure from Philips of the Netherlands—who licenses these manufacturers to build CD players—has convinced them to delay DAT until CD is more established.

Those showing DAT machines in Tokyo included Aiwa, Denon, JVC, Kenwood, Luxman, Mits-

bishi, Onkyo, Sony, Technics, and Yamaha. DAT players for the car were shown by Alpine, Kenwood, and Technics, and Aiwa even showed a prototype DAT portable.

Outstanding among other products at the Fair was Sony's new portable CD player, the D-100 (to be called the D-10 in the United States). It is the thinnest CD player yet. At the other extreme, Yamaha has some huge high-end components, including a preamp with a built-in DSP-1 Digital Sound Field Processor.

Also noteworthy were components from Audio-Technica that look like ammunition boxes, speakers from JBL called Control 1, a Marantz CD player with Favorite Track Selection (*à la* Magnavox CD650), a boomy Hitachi boom box with a "3D Super Woofer," a CD player from Stax, a speaker with slat drivers made of real wood from Daiken, and a \$300 projection TV from a company named Infranoise. Luxman's LV-109 has an on-board digital-to-analog converter (for CD's and DAT) and an outboard phono-equalization section (for LP's).

NIPPER GOES DEUTSCH

General Electric, which recently acquired RCA Corporation, is selling its 75 percent interest in RCA/Ariola Records to the owner of the other 25 percent, the West German firm Bertelsmann A.G. GE retains the right to use Nipper, the RCA dog, on TV sets and other consumer electronic products, but Bertelsmann is acquiring the right to use the famous Nipper logo and the RCA label on its records.



Matthew Polk's Magnificent Sounding New SDA 2A



SDA 2A
\$499.00 ea

Digital Disc Ready

Matthew Polk stands proudly alongside the latest version of his Audio Video Grand Prix Award Winning SDA 2A

"The Magnificent Sounding New True Stereo SDA 2A Again Demonstrates the Genius of Matthew Polk"

This revolutionary speaker is the most extraordinary value in high end audio!

Matthew Polk's magnificent sounding new 3rd generation SDA-2A incorporates many new advances pioneered in his top-of-the-line Signature Edition SRSSs. It achieves stunningly life-like musical reproduction which would be remarkable at any price but is simply extraordinary at \$499. each.

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.

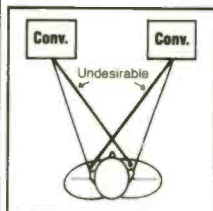
Why do Polk SDAs always sound better than conventional speakers? As illustrated in diagram 1: when conventional loudspeakers are used to reproduce stereo both speakers are heard by both ears which causes a form of acoustic distortion called interaural crosstalk which cuts down stereo separation, obscures detail and interferes with the proper reproduction and perception of imaging, and spaciousness. As illustrated in diagram 2: Polk SDAs are designed 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 (see diagram 3) each SDA incorporates a separate set of drivers which radiates a special dimensional (difference) signal which cancels the undesirable interaural crosstalk distortion 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

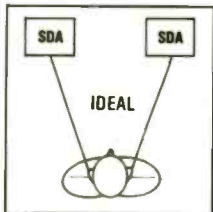
"The result is always better than would be achieved by conventional speakers..."

Stereo Review Magazine



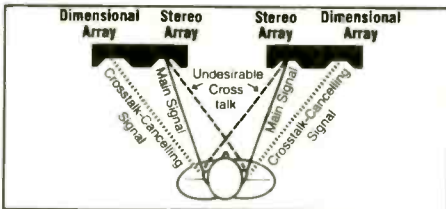
Conventional Speakers

Reproducing Stereo
When conventional speakers reproduce stereo, both speakers are heard by both ears which reduces stereo separation, obscures detail and interferes with proper imaging.



Only Revolutionary Polk SDAs Reproduce True Stereo

Only Polk SDAs reproduce True Stereo by allowing each speaker and signal (L or R) to be heard by only the correct ear (like headphones) which results in dramatically improved stereo separation, detail and three-dimensional imaging.



How Polk SDAs Achieve True Stereo

Each Polk SDA incorporates a special extra set of drivers which radiates a difference signal which cancels the undesirable signal going from the wrong speaker to the wrong ear, (interaural crosstalk distortion) resulting in True Stereo reproduction.

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 \$499 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. One famous reviewer remarked that after hearing the SDAs his wife said that she heard such a dramatic improvement in the sound that *she* insisted that he replace their current speakers.

"Mindboggling, Astounding, Flabbergasting"

High Fidelity Magazine

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 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 \$1395. 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 \$1395 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®

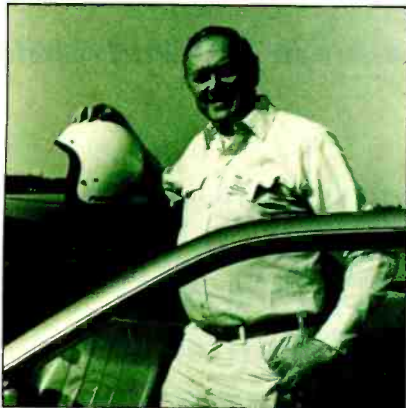
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CIRCLE NO. 37 ON READER SERVICE CARD

Where to buy Polk Speakers? For your nearest dealer, see page 186.

SPEAKING MY PIECE

by William Livingstone



Ready to check the Ford JBL system

Means and Ends

RECENTLY in the course of business I met Roger Blethen, senior vice president of LTX Corporation, an electronics firm with headquarters in Westwood, Massachusetts. Since his very high-tech company provides testing facilities to many audio manufacturers, I was pleased that he spoke well of this magazine's test reports from Hirsch-Houck Laboratories.

"Although it may surprise you," Blethen said, "I also get a great deal of pleasure from reading the record reviews in STEREO REVIEW. Your music critics express their likes and dislikes more freely than the audio writers."

Since many doctors, physicists, and other scientists are passionately devoted to music, it doesn't surprise me at all that someone in Blethen's position would enjoy reading about it. Our audio writers tend to be as objective as possible, but music criticism has to be subjective, and lively record reviews help to personalize the content of our pages.

Occasionally I am asked what percentage of our readers are primarily interested in the magazine's equipment coverage and what percent in the music. I think everyone who reads it regularly must have a primary interest in equipment since the magazine is about the reproduction of music through electronic means. Some readers undoubtedly see the equipment not as a means to a musical end but almost as an end in itself. I think they miss a lot.

In Toronto I attended a recent press tour of a Ford audio manufacturing plant at Markham, Ontario. There I chatted with John Eargle, JBL's senior director of product development and application, who has been active in devising the Ford JBL audio system introduced in the 1986 Lincoln Continental. Eargle also has an extensive background as a recording engineer with such companies as Mercury, RCA, and Delos. When I learned in Toronto that Eargle has a degree in music as well as one in engineering, I realized with a touch of envy that his must be the ideal background for the enjoyment of recordings and of consumer electronics equipment.

STEREO REVIEW tries to help those who are not so well schooled or so well balanced by providing guidance in both the technical and artistic areas. We don't offer a home-study course in audio engineering, but we try to help readers choose the best equipment for their needs and help them use it to serve best the musical ends for which it was designed.

The record reviews are intended to help readers open their minds to a wider variety of musical pleasure. The rock and pop reviews are fun to read, and they keep the adrenalin flowing in the veins of those who disagree with our critics. In the classical area the reviews are guides to buying.

For years we have published "The Basic Repertoire," a guide to the best recordings of the most famous symphonic compositions. In response to reader demand we have recently asked our critic Richard Freed to revise the list in terms of compact discs, choosing the best CD's of Beethoven's Fifth Symphony, Mendelssohn's Violin Concerto, and so forth. Parts of it were published in our September and October issues, and a considerably longer, complete list has now been printed in pamphlet form.

To receive a copy send a stamped (with 44¢ postage), self-addressed long envelope and a check for \$1.50 (no cash, please) to Basic Repertoire, Stereo Review, 1515 Broadway, New York, NY 10036. Outside the United States send the self-addressed envelope and \$2.50. I hope the list will lead you to greater musical enjoyment of your CD player in home or car. □

Stereo Review

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Yamaha
is introducing
an audio/video
control amp,
a rear-channel
stereo power amp,
a video enhancer,
a multi-mode
surround sound
amp,
and an interactive
audio/video system
remote controller.

This is it.

It's called the AVC-50. You can use it to control just about everything in your audio/video system. It has a total of four video and six audio inputs. And the included remote can be used to control other Yamaha interactive audio components. So you can turn on your entire system, select audio and video source, control volume and playback of tuner, turntable, cassette deck, even a CD player.

The AVC-50 is also a full-featured integrated amplifier with 45 watts of power per channel.* That's enough power to use it as the primary source of amplification in your A/V system. Or as a supplement to your present source of amplification, you can use it to drive a pair of rear channel speakers. Either way, the AVC-50 can decode the Dolby** Surround signals. And when used with a rear speaker setup, you'll enjoy the full surround sound effect of movies that are encoded with this special sound-track feature.

But many stereo movies don't have surround sound. Which is why the AVC-50 has a special feature called the Yamaha Natural Surround mode. This unique circuit creates the same thrilling effect by feeding the appropriate background and ambient sounds through the rear speakers.

The AVC-50 can even simulate stereo and surround sound from a mono source. And since most network and cable TV programs as well as many movies on cassette are mono, you should get a lot of use out of this feature.

You should also appreciate the video enhancement features built into the AVC-50. Three front panel controls give you continuously variable control over picture detail, sharpness and video level. Meaning you can not only improve the quality of the video signal during the recording process, but you can also improve the picture quality during playback.

There is one thing the AVC-50 can't do, however, and that is usher you to your seat. But once you are seated, with one of these at your command, you may never have to get up again. Or want to.



*45 watts RMS per channel, both channels driven into 8 ohms, from 20-20,000 Hz, at no more than 0.05% Total Harmonic Distortion.

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

CIRCLE NO. 14 ON READER SERVICE CARD



CD Manufacturing

The October issue on compact discs was entertaining and informative. "The Magic of CD Manufacturing," by Steve Birchall, is one of the best articles I have read on any audio topic. Julian Hirsch—one of the main reasons I buy STEREO REVIEW—was very even-handed in his discussion of "What You Should Know About Digital Sound." His outlook on audio is balanced, being neither too commercial nor "off the deep end."

RON CHARLTON
Knoxville, TX

During the past three years I've read dozens of technical articles in as many different magazines about how CD's are manufactured. Steve Birchall's fascinating account in the October STEREO REVIEW is the first one that really gets to the meat of the matter!

MICHAEL E. HALBROOK
Houston, TX

A short note to let you know I enjoyed your October issue even more than usual. The article on how CD's are made was a jewel—I'd like to see more like that. In fact, I'd like to see micro-photographs of the surface of a CD. Fascinating! CD's are great. I'm getting the same pleasure from them as I did in 1949, when LP's came out.

Keep up the good work.

PHILIP SHAPIRO
Los Angeles, CA

For a year or longer I've been reading that compact disc prices are going down, or soon will. So why haven't they?

RICHARD BRANYAN
Memphis, TN

Because the supply from the manufacturers has still not caught up with consumer demand.

I have read part of the article in October on CD manufacturing several times and cannot make any sense of it. If the label is printed on top of the protective layer of acrylic resin, which is directly on top of the pits, how does the laser read the pits through the printed label? Isn't the label printed on the side opposite the pits?

JOEL ZELIGSON
Tulsa, OK

The laser reads the pits through the clear side of the disc, opposite the label. Its beam is reflected by a layer of aluminum applied directly onto the pitted side of the disc after it comes from the pressing machine. The aluminum layer is then covered by acrylic resin, and the label is applied over that.

Analog CD's

I like STEREO REVIEW's fine reviews of records and compact discs—but I wish you would show the recording code for CD's. Since they are so expensive, I don't want to buy one unless it's really super-quality and has a DDD recording code.

HART ANWAY
Clinton, NY

See November's article "Analog to Digital," about the fine CD's made from analog recordings, to understand why we do not believe CD's should be selected "by code."

Enough Classical Reviews

In response to William Lerch's letter in the October issue, I would say that STEREO REVIEW absolutely does not need any more classical reviews. I think the magazine emphasizes classical music, not car stereo or rock reviews.

As a rock listener, I use my own judgment to decide whether or not I like any of the wide variety of music I hear on several of my local radio stations. Music is so personal, I don't believe any critic can tell me if I will or won't like an album. I could easily demand a "Basic Repertoire" for rock music, but that isn't why I read STEREO REVIEW. I subscribe because of what the magazine does best: keep me up to date on new equipment through articles, advertisements, and test reports.

ROBERT HADLEY, JR.
Louisville, KY

First Jazz Label

On page 111 of the October issue, Chris Albertson writes, "Founded in 1939, Blue Note was possibly the first record label devoted to jazz."

Not quite. The redoubtable Milt Gabler kicked off his famous Commodore label with a recording session on January 17, 1938, using a typical Eddie Condon group.

RICHARD A. DEUTSCH
Encino, CA.

Chris Albertson replies: "Mr. Deutsch is correct. I relied on my memory, and I should have looked it up."

What's in a Name?

I was completely unaware of the possible change in STEREO REVIEW's name (to *Stereo-Video Review*) until I caught sight of the September "Letters" column. Several of my favorite video magazines changed their names, then their formats, to become much less technically oriented. I now have to go to the newsstand monthly to see if there's any-

thing I might be interested in. There usually isn't, so I've dropped my video subscriptions altogether, but I continue to get my technical music magazines monthly. Don't let me down, folks!

WILLIAM C. GOFF
Newington, CT

We are not now, nor have we ever been, planning to change our name. The suggestion of Stereo-Video Review was a trial balloon floated by several of our readers who have strong feelings, pro and con, about our continuing coverage of musical video releases and hi-fi video equipment.

Audio Around the World

STEREO REVIEW is to be commended for its comprehensive survey of the European audio industry in the August issue. The dominance of the Japanese manufacturers over the past decade has obscured the signal contributions of the Europeans to the present state of music reproduction. The process of magnetic tape recording was developed and perfected to a large extent in Germany, and Philips has, of course, played a vital role in the evolution of both cassettes and digital audio.

JOHN J. JOSWICK
Laurel, MD

Your issues on American, Japanese, and European audio manufacturers failed to mention Sherwood. Where does this manufacturer, formerly in Chicago, now hail from?

BOB SOGGE
Tucson, AZ

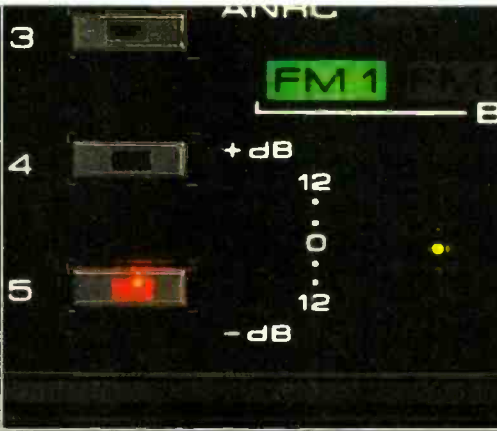
Sherwood is now a division of Inkel Corp., a Korean manufacturer. The U.S. facilities are located at 13845 Artesia Blvd., Cerritos, CA 90701.

Frictionless Analog

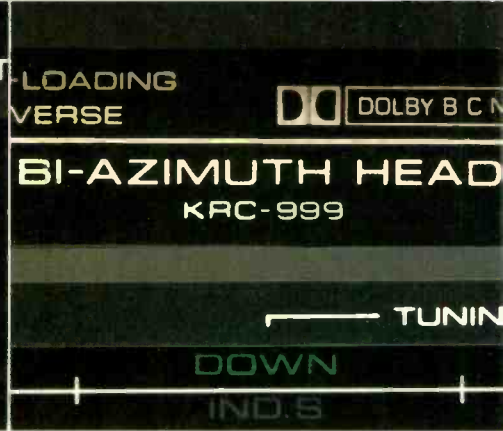
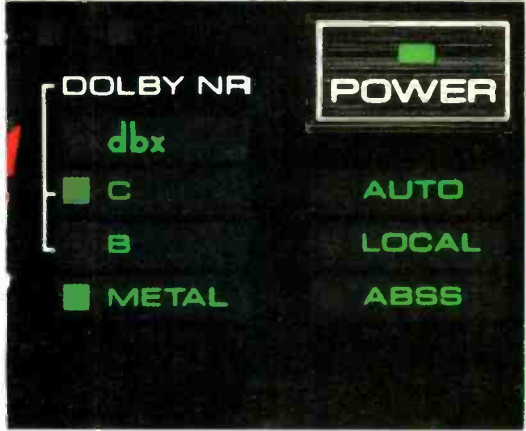
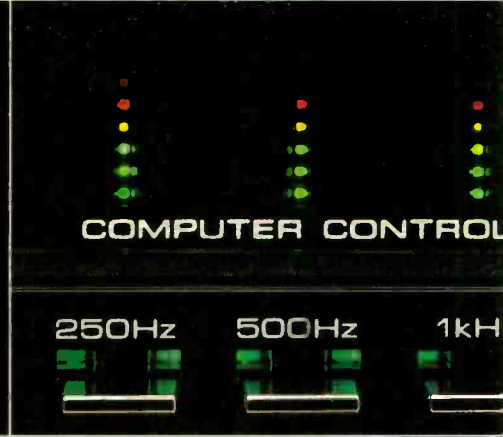
The digital-vs.-analog debate is a complex one, with good arguments to be made on both sides. But the recording method is not as significant as the playback method. Compact disc players are *frictionless*, and that is what makes me a CD fan. I wouldn't care if CD's were recorded with an analog signal. The mere fact that the sound does not deteriorate with repeated playings is compelling.

In defense of analog recording, I will say that the most realistic recordings I have ever heard were Sheffield Lab direct-to-disc LP's—on their first or second playings. After that, the minute amount of friction exerted by the stylus was enough to remove that which set direct-to-disc apart from the rest of the analog world. What I would like to see is the best of both worlds—frictionless

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CLOSE



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And scan the first five seconds of every cut.

And take stations with the strongest signal and automatically program them into memory.

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How about the lowest signal to noise ratio available. Metal tape frequency response of 20 ~ 22.5k (± 3 dB). A 7-band graphic equalizer that instantly converts to a spectrum analyzer.

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than skin deep. It represents the culmination of 25 years of superior audio technology from Kenwood. Consider it our anniversary present to the world of music.

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analog. I understand from the August "Bulletin" that Finial Technologies is introducing a turntable that plays (reads?) conventional LP's with a laser beam. How about having Julian Hirsch check it out for us?

JOE LIPTAK
Atlanta, GA

When Finial's laser turntable gets beyond the prototype stage, we will certainly consider doing a test report.

Recordable CD's

Please allow me to take exception to Julian Hirsch's contention (in his anniversary profile in September) that there will be no demand for a home CD recorder. Mike Oldfield's "Hergest Ridge" may be highbrow in a hundred years, but who wants to wait till then for a CD of it? The availability on CD of the Challengers, Junior Walker, or even the Magical Strings will probably take even longer. Furthermore, it's not only the clarity of the CD that's revolutionary but also its programming accessibility. A CD changer capable of programming sixty selections or more from a

number of discs will have broad appeal, and this capability would be enhanced by the ability to record your own CD's.

EDWARD ANDERSON
Strasburg, VA

Against the Tape Tax

It appalls me to learn (August "Bulletin") that the record industry has the political lobbying power to persuade our U.S. Senate to propose a "royalty tax" on audio tape recorders. In an apparent attempt to "reimburse" the industry for income allegedly lost to "bootleg" recordings, Bill S 1739 would give record companies the take from a tax on tape decks of up to 25 percent!

This makes me laugh! Tape decks are used for many purposes, only a small number of which include recording. When recordings are made, it is usually to produce a higher-quality copy of an album than the record industry's prerecorded cassettes provide. And occasionally an additional copy for the car tape deck is made. Surely one is not expected to buy two copies of the same cassette.

An industry with the ability to turn

nobodies into millionaires overnight should spend its time and money on producing quality products, not on wasting government time and money trying to create protective legislation. Then we would all be money ahead.

GENE GOODELL
Tacoma, WA

Peter Gabriel

With his backhanded review in September of Peter Gabriel's "So," Mark Peel reveals his total inability to recognize one of the truly distinctive voices in modern pop—or to hear the tune that voice is calling.

Mr. Peel calls Gabriel to task for allegedly growing "too dependent on a few stylistic signatures." Hasn't he listened to Gabriel's four previous studio albums? Each one offers a completely different stylistic approach, and therein lies the essence of Gabriel's art: he takes on some of the most cliché-filled pop styles and turns them inside out, in the process revealing depths of meaning never noticed before.

The amazing thing about "So" is that without promotion, without fanfare, it

Sony just extended the range of



soared to the top of the album charts, supported only by Gabriel's Amnesty International tour—a typical Gabriel gesture, putting ideals before career. The album's success is a tribute to the public's ability to recognize true genius even with the glut of Madonna/Lover-boy clones choking the airwaves.

CHUCK FRIER
Collinsville, IL

CD Packaging

I recently bought a compact disc that wasn't in a "jewel box" but in a cheap paper case. I've seen a few other cases like this on the market, but I've never owned one until now. The package stinks, since it warps so easily. Is this what's in store for us CD buyers in the future? The prices keep going up, not down, and the quality is going down, at least in the packaging. I guess pressing quality goes next. What's the story, and can I find blank jewel boxes?

TOM MATHES
Winston-Salem, NC

The only thing I dislike about CD's is the room those handsome "jewel

boxes" take up. Is there any reason CD's cannot be kept in cardboard sleeves like computer floppy disks? CD's are touted for durability but packaged for fragility. How come?

DON MECHLING
Oakland, CA

Obviously, not everyone has the same preferences in CD packaging, and several record companies have been experimenting with alternatives to the "jewel box" to see how the public reacts. Empty jewel boxes are carried by some record stores and mail-order outlets.

Lighten Up

After reading through the product critiques and related tests in STEREO REVIEW, I find it very enlightening to spend a few moments sifting through the "Popular Music" section. Some of the reviews are quite humorous, and it is a joy to experience some good, honest sarcasm and a laugh or two along the way. Specifically, I want to congratulate Steve Simels for the term "Velveeta-rock" he used in the September issue (in a review of Journey's "Raised on Ra-

dio"). It wins the Funniest Thing I've Heard in a Long Time award. The pop reviewers provide a good contrast to the more serious material and keep the reader good humored as well as well informed.

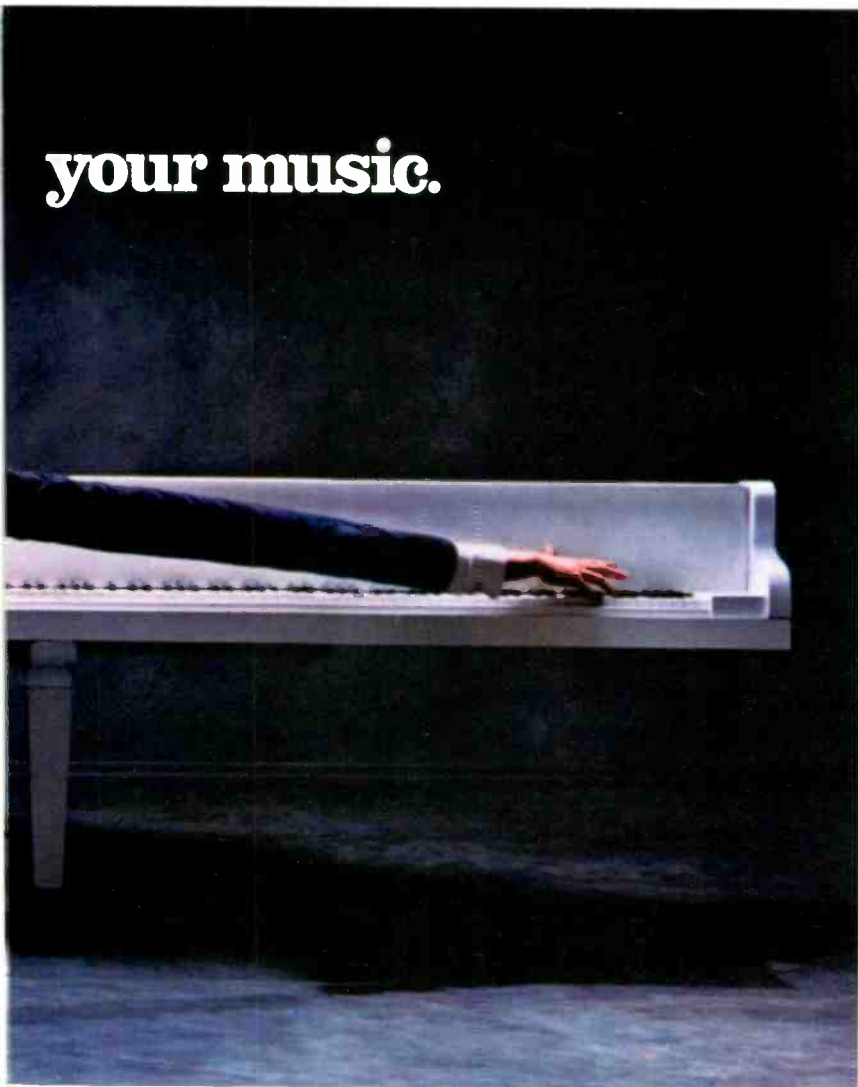
DAVID J. FOULKE
Ann Arbor, MI

Erratum

In "How to Buy an Amplifier" in the November issue, the figures under the column headings in the table "Power Requirements" on page 78 were transposed. The table should have appeared as shown below.

	Sound level (dB)	Power (watts)
Highest transient peaks	110	300
Very loud music	100	30
Loud music	90	3
Average music	80	0.3
Average conversation	70	0.03
Quiet music	60	0.003
Distant traffic	50	0.0003
Background noise (city)	40	0.00003
Background noise (suburban)	30	0.000003

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

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

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

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

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Stereo is more than just a suggestion of left and right. Ideally, it is the sonic image of an environment, recreating the time and space of a live performance. It's left, right, center and all points in between. It's up, down, near and far.

It's what we call a soundstage. This third dimension (an audible depiction of a recording's spatial cues) is the designer's ultimate goal. At Infinity, it has obsessed us throughout our 18 years of designing and building loudspeakers. Above all, it is a goal which we have approached systematically, through unremitting attention to drivers, cabinets and crossovers.

Traditional driver materials and designs proved inadequate for the accurate rendering of a soundstage. So we developed new materials—like polypropylene compounds and poly-

imide/aluminum films—and used them in drivers with specially contoured cones, domes and planar diaphragms, whose unique structural properties achieve wider bandwidth, quicker transient response and lower distortion than conventional designs.

Since drivers alone don't recreate an image, we have curved the enclosure's front vertical edges so you hear sound radiated directly from the drivers, not

reflections generated by the cabinet. And our elegant, linear-phase crossovers insure seamless transitions from driver to driver.

But we had one more goal in our audible conquest of space: value. Realizing a proper soundstage in our \$45,000 Infinity Reference Standard is one thing, but achieving much of that performance in an affordable bookshelf speaker is another. So we invite you to explore our new RS Series—five models, priced from under \$150 per pair, that affordably allow you to achieve a new perspective...

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NEW PRODUCTS

Pioneer

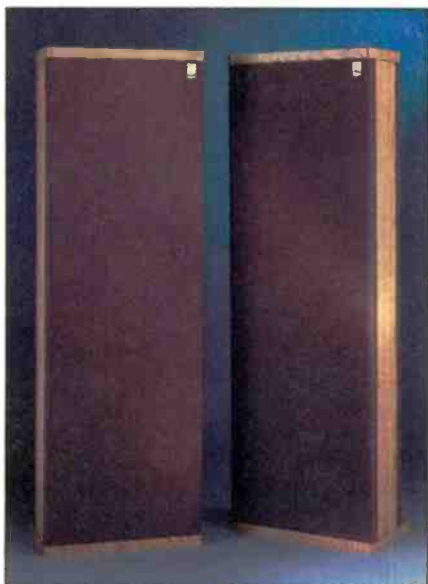
The VSX-5000 remote-controlled audio/video receiver from Pioneer simulates studio and stadium acoustic effects as well as decoding Dolby Surround soundtracks on videotapes. The receiver can drive the four speakers needed for surround sound. When operated into two channels, the VSX-5000 delivers 100 watts per channel. In the surround mode, the main channels are rated at 70 watts per channel and the rear ones at 10 watts per channel.

Audio inputs are provided for a record player and three line-level sources. Twenty AM and FM stations can be preset into memory. Video features include inputs for three sources, two-way dubbing, a noise filter, and picture enhance-



ment, with split-screen capability for comparing the original and enhanced pictures. Price: \$569.95. Pioneer, Dept.

SR, 5000 Airport Plaza Dr., P.O. Box 1720, Long Beach, CA 90801.
Circle 120 on reader service card



Mirage

Designed to create a nearly spherical radiation pattern, the Mirage M1 speaker radiates sound from both its front and rear surfaces. Two forward-facing 8-inch polypropylene woofers cross over to two 4½-inch polypropylene midrange drivers at 300 Hz. One midrange is mounted on the front of the speaker, the other on the back. They cross over at 2,200 Hz to a pair of front and rear Ferrofluid-cooled soft-dome tweeters. The system's frequency response is given as 25 to 22,000 Hz ± 2 dB. The speakers are rated to handle a maximum of 300 watts of power. Finished in oak veneer with black cloth grilles, the M1's measure 19½ inches wide, 59 inches high, and 9½ inches deep. Price: \$2,000 per pair. Mirage Acoustics, Dept. SR, 135 Torbay Rd., Markham, Ontario, Canada L3R 1G7.
Circle 121 on reader service card



Koss

The Koss Kordless JCK/200S headphones come with an infrared transmitter that plugs into an ordinary headphone jack and broadcasts audio signals to the headphones, eliminating the need for a connecting cord. Powered by a 9-volt battery with an LED battery-strength indicator, the headphones receive the broadcast audio signal from any position except when something comes between the transmitter and the receiver on top of the headphones. An on/off switch and a volume control are on the headphones. Signal-to-noise ratio is given as 60 dB and distortion as less than 1 percent. Price: \$149.95. Koss Corp., Dept. SR, 4129 N. Port Washington Ave., Milwaukee, WI 53212.
Circle 123 on reader service card

50's Auto Art

The "Car's the Star Diving Cadillac" audio/video entertainment center is made from an actual tail fin of a 1959 Cadillac, outlined in neon, and a Memphis-style laminated cabinet. The cabinet is said to be perfect for storing stereo components (not included) to play rock-and-roll from the 1950's. Each Diving Cadillac is custom built, and the customer can choose the colors of the fin, neon, and wood. Price: \$10,000. A limited number of cabinets using fiberglass replicas of the tail fin are available for \$5,000. 50's Auto Art, P.O. Box 13061, Kansas City, MO 64199-3061.
Circle 122 on reader service card





Discrete Technology

The Distech LS-1 programmable CD player is said to match any combination of turntable, tonearm, and phono cartridge in the width, depth, height, and detail of its sound stage. The player has a large power supply with electrical isolation to prevent digital feedback and AC noise. It can repeat one track or all programmed tracks. Two outputs, one variable and one fixed, allow direct connection to a power amplifier. For reduced phase shift, the analog output filter is supplemented by a digital filter. The player oversamples the 44.1-kHz signal on each CD at a rate of 176.4 kHz. Intermodulation distortion is rated at 0.044 percent at 0 dB. Price: \$1,195, which includes a pair of Distech interconnect cables. Discrete Technology, Dept. SR, 2911 Oceanside Rd., Oceanside, NY 11572.

Circle 124 on reader service card

California Audio Labs

Six vacuum tubes perform current-to-voltage conversion, Besselworth filtering, and noise-shaping functions in the Tempest compact disc player from California Audio Labs. The programmable player has standard search and access controls. There are no transistors or integrated circuits in the audio signal path. The elimination of gain stages is

said to reduce noise distortion, and the active distortion correction uses no negative feedback. Parts in the Tempest include RAM tubes, Sideral Akustic capacitors, Tiffany connectors, and oxygen-free linear-crystal wire. Price: \$1,895 in black finish, \$1,945 in silver finish. California Audio Labs, Dept. SR, 21962 Annette Avenue, El Toro, CA 92630.

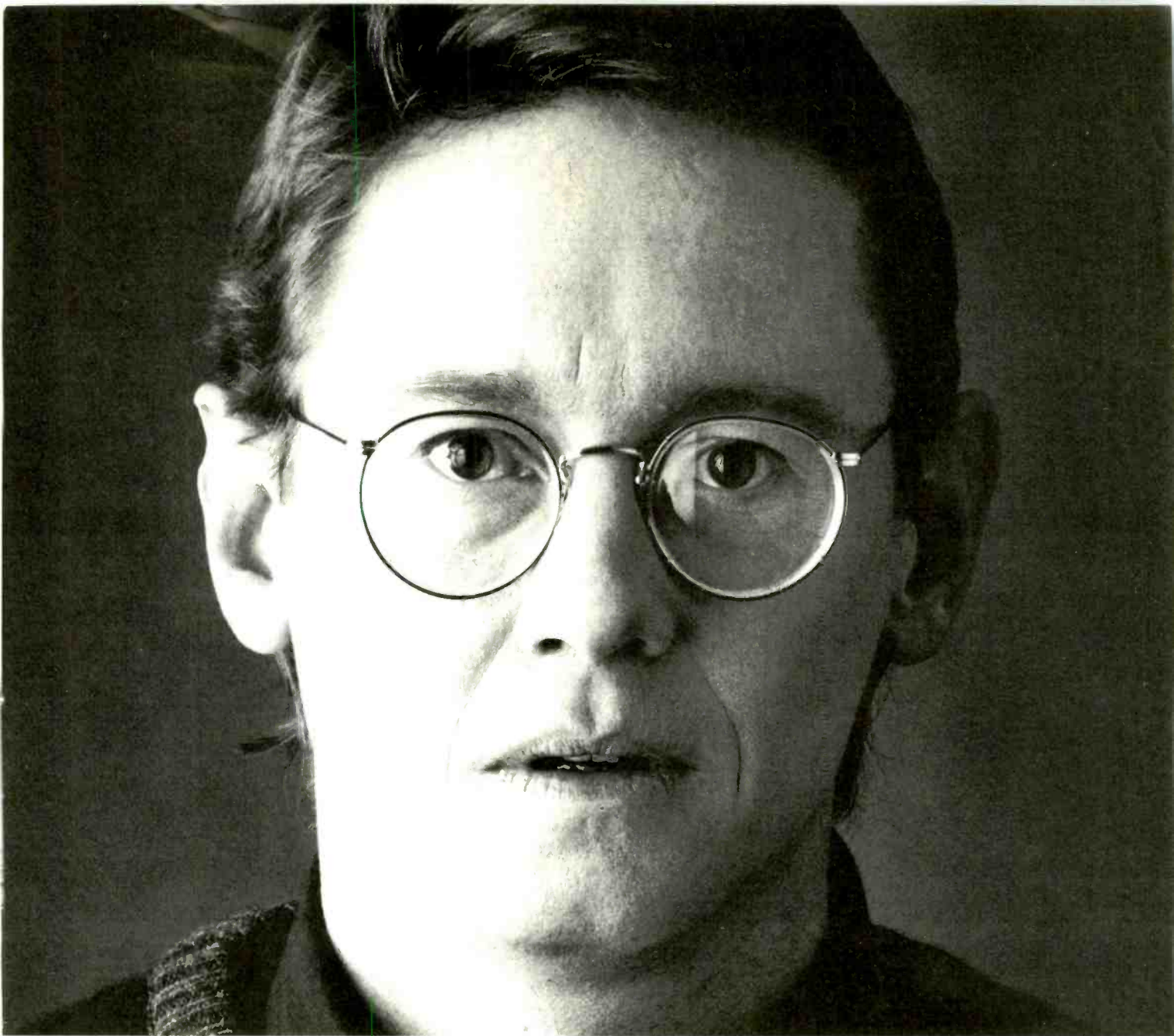
Circle 125 on reader service card



Ortofon

Ortofon's X1-MC (right) and X3-MC (left) are modestly priced, high-output moving-coil (MC) phono cartridges. They can be used with ordinary moving-magnet (MM) phono inputs but are said to have superior imaging, detail, and frequency response than moving-magnet cartridges. The high output of the X1-MC and X3-MC is made possible by their small samarium-cobalt magnets, field-focusing yoke, and special coil winding. Their moving mass is given as 0.0012 gram. The X1-MC has an elliptical stylus, the X3-MC a fine-line stylus. A vertical tracking force of 2 grams is recommended for both cartridges. The X1-MC has a rated frequency response of 20 to 30,000 Hz +4, -1.5 dB; the X3-MC is rated for 20 to 40,000 Hz within the same tolerance. Prices: X1-MC, \$75; X3-MC, \$140. Ortofon, Dept. SR, 122 Dupont St., Plainview, NY 11803.

Circle 126 on reader service card



“How Much Do I Have To Spend For Good Speakers?”

Audio engineers find good-natured argument in just about everything. But they agree that speakers are the most important part of your system and create the greatest sonic difference.

Yes, it makes good sense to have good speakers. And that makes us happy at KLIPSCH® because making good speakers is our only business. But for the next few moments, forget this is a KLIPSCH advertisement and consider how your system compares with what many experts describe as an “ideal balance.”

Some suggest that 40% to 50% of a basic system's cost should be allocated to speakers. Another

formula is to spend twice as much for your speakers as your amplifier. Spend less and you probably won't realize the full potential of your system.

The issue is really one of value. Once you're in the proper price range, a little shopping will help you find the speakers that give you the most for your money. Compare various models for sensitivity, freedom from distortion, smoothness of response, wide dynamic range, quality of cabinetry, critical acclaim, a time-honored design – all are important characteristics. While you're shopping, you'll note that it's tough to find one speaker that wins in every category.

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So how much should you spend for good speakers? Decide for yourself at your nearest KLIPSCH dealer. He has an excellent KLIPSCH model in virtually every price range. To find him, look in the Yellow Pages, or call toll free, 1-800-223-3527.



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HOT NEWS FROM A COLD MEDIUM

TWENTY years or so ago the followers of Marshall McLuhan were telling us that factual content is less important than the way information is presented. "The medium is the message," they chanted. They rated the media by temperature—hot was good, and TV was hot. They termed print "a cold medium" and suggested that its days were numbered.

In the last two decades, video has certainly blossomed, and VCR's have penetrated the American home, but print refuses to die. Magazines continue to flourish, and waves and waves of new books come forth from publishing houses every spring and fall. They vary in quality, but they keep on coming.

The best introduction I know to home hi-fi is *The New Sound of Stereo* by Ivan Berger and Hans Fantel (Plume, 265 pp., \$12.95). Both of the authors are former contributors to this magazine. Berger, currently the technical editor of *Audio*, describes the book as a short cut to becoming a knowledgeable audiophile. Mastering its contents will, he says, give you what you would learn in four or five years of reading the principal hi-fi magazines.

Akio Morita, chairman of Sony Corporation, describes that company's rise and the differences between American and Japanese management styles in *Made in Japan*, which he wrote with Edwin M. Reingold and Mitsuko Shimomura (E.P. Dutton, 309 pp., \$18.95). It's not easy reading, but it's an interesting story.

An American failure in consumer

by William Livingstone

electronics is set forth in *RCA and the Videodisc* by Margaret B.W. Graham (Cambridge University Press, 256 pp., \$19.95). How could RCA have been so dumb as to bring out the videodisc in mono in 1981, more than twenty years after the introduction of stereo records? Maybe it's just as well that General Electric has gobbled up RCA and has sold the RCA record division to the Germans.

The title says it all in *Handbook of Recording Engineering* by John Eargle (Van Nostrand Reinhold, 405 pp., \$54.95). The author has engineered some compact discs of excellent sonic quality for the Delos label. His book, though quite technical, is surprisingly easy to read. It is of interest not just to record-company professionals, but to serious collectors as well.

Serious collecting is only one aspect of the phenomenon of recorded music as discussed in *The Recording Angel* by Evan Eisenberg (McGraw-Hill, 264 pp., \$17.95). Subtitled *Explorations in Phonography*, this book examines the effects that recordings have had on musicians and society.

As usual, the fall lists include a number of biographies of musicians. *His Way, The Unauthorized Biography of Frank Sinatra* by Kitty Kelley (Bantam, 575 pp., \$21.95) is about 570 pages more than most people should want to read about unsavory aspects of the private life of a great singer of popular songs.

A warmer book is the autobiography *I, Tina* by Tina Turner with Kurt Loder (Morrow, 236 pp., \$16.95). Loder is no prose stylist, but he is generous with long quotes from Ms. Turner, who conveys a lot of feeling about the events in her career. Her faith rings true in such statements as: "I always seemed drawn to spirituality, but I was also smart enough to realize that I shouldn't confuse performing and spiritual teaching."

Robert Shelton's *No Direction Home, The Life and Music of Bob Dylan* (Beech Tree Books, 573 pp., \$17.95) does not answer for me the question of whether Dylan's born-again spiritual phase was sincere

conversion or canny showmanship. Comparing Dylan to such poets as Rimbaud and Yeats seems like overstating the case, but there's no denying his success, his influence, or his staying power. I've always wondered whether this emperor really had clothes. Robert Shelton, who has kept the faith for twenty-five years, can still see them.

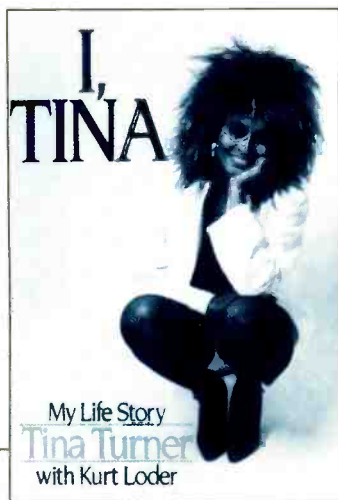
Two large, profusely illustrated,



Author Akio Morita, of Sony Corp.

soft-cover books on Bruce Springsteen are currently in the shops. They are *Springsteen* by Robert Hilburn (Charles Scribner's Sons, 256 pp., \$17.95) and *Springsteen, Blinded by the Light* by Patrick Humphries and Chris Hunt (Henry Holt, 176 pp., \$12.95). Less sycophantic than Dave Marsh's *Born to Run*, they make some pretense to objectivity, but there are no more secrets. Hilburn has the edge on photos.

What do you do for an encore after Bach? Our contributor Herbert Kupferberg has followed his witty *Basically Bach* (1985) with the equally charming *Amadeus, A Mozart Mosaic* (McGraw-Hill, 271 pp., \$14.95). It is described in this year's list of Christmas gift suggestions on page 87. A gift suggestion of Christmases past was Helena Matheopoulos's *Maestro* (1982) a collection of revealing interviews with conductors. Ms. Matheopoulos is back this year with *Divo* (Harper & Row, 384 pp., \$25), interviews with great tenors, baritones, and basses. She is best in the tenor section, perhaps because Carreras, Domingo, Gedda, Kollo, Pavarotti, Schreier, *et al.* gave her more to work with than basses Sam Ramey, Kurt Moll, and Paata Burchuladze. This one proba-



bly won't hit the stores until just before Christmas.

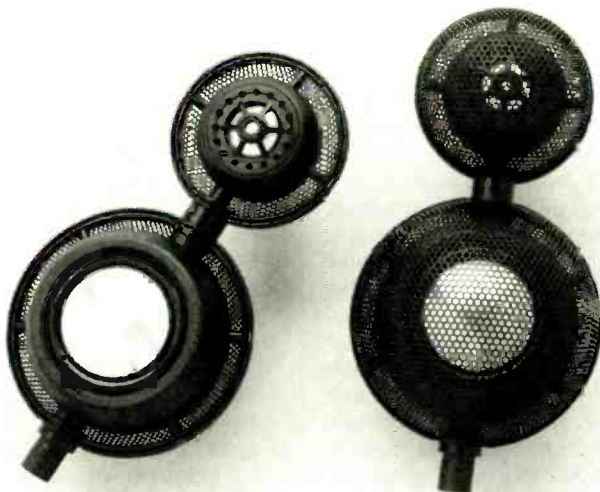
Another collection of biographical articles, *American Musicians, 56 Portraits in Jazz* by Whitney Balliett (Oxford University Press, 415 pp., \$22.95), is made up of all the jazz profiles Balliett has written for *The New Yorker* over the last twenty-four years. It includes his articles on Sidney Bechet, Earl Hines, Mary Lou Williams, Buddy Rich, Duke Ellington, Ornette Coleman, and many others. Few music critics write as well as Balliett.

A good deal of space is given to contemporary rock, jazz, and country music in *The New Grove Dictionary of American Music*. Its publishers describe it as "the first truly comprehensive and authoritative dictionary of American music and musical life." Running to some 2,600 pages and containing more than 5,000 articles and 500 discographies, the four-volume set surveys popular and classical traditions in America from Colonial times to the present. More than 2,500 entries are devoted to performers, from "Canonball" Adderley to Pinchas Zukerman. The *American Grove*, which costs \$495 plus \$10 for shipping, can be ordered from Grove's Dictionaries of Music, Inc., 15 East 26th Street, New York, NY 10010.

An upbeat view of life in the United States is presented in *Kenny Rogers' America* (Little Brown, 120 pp., \$24.95). It is a collection of photographs taken by the famous singer as he traveled about the country.

A very different view of one extravagant American's life is *The Wonderful Private World of Liberace* by Liberace himself (Harper and Row, 224 pp., \$29.95). It is a collection of anecdotes and photographs of lavish homes, costumes, and jewels. Do you suppose the Russians think we all live like that?

A jet setter in high-life circles in Europe is the conductor Herbert von Karajan, who literally pilots his own jet planes and is the captain of his yachts. The book *Herbert von Karajan* by Roger Vaughan (Norton, 274 pp., \$16.95) is not an authorized biography, although for two years Karajan cooperated with the author, who is the editor of *Yacht* magazine. It is hard to convey to American readers the power and prestige Karajan enjoys in the Central European artistic world, but Vaughan tells the story pretty well. He portrays Karajan as a complex, immensely gifted man if not a par-



The Shape Of Things To Come.

For years physicists have agreed that the ideal loudspeaker would imitate an "acoustically pulsating sphere"—a ball that radiates music omnidirectionally. And for years companies have been trying to design speakers based on this model. Many of their efforts have been interesting, but most have fallen short of the mark. So far short that many people have given up on the idea of a *true* omnidirectional speaker as being "a thing of the future."

But at Magnat the future is here today. We believe (as does virtually every audio critic in Europe) that our Magnasphere™ series loudspeakers come closer to that theoretical ideal than any others ever designed.

Where conventional speakers use cones or domes for midrange and high frequency drivers, Magnaspheres use revolutionary ball-shaped, baffle-free transducers that emanate uniform sound waves in *all directions*. The sonic performance of the Magnaspheres is so real, so uncannily natural, they've already accomplished something no other product has ever done—they've won a record *three* "Decibel d'honneurs," France's highest audio award.

Right now the Magnasphere Delta II, Gamma and Beta are available through a small, carefully chosen network of Audio Specialists in the United States. Visit one soon and hear the shape of things to come.

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CIRCLE NO. 56 ON READER SERVICE CARD

ticularly pleasant or appealing one.

Karajan wrote a warm forward to *Grandissimo Pavarotti* by Martin Mayer (Doubleday, 224 pp., \$40). It is a tribute to tenor Luciano Pavarotti on the twenty-fifth anniversary of his operatic debut, and it presents him as a very attractive, big, happy man. It's a big book with little text and lots of pictures (well chosen by Gerald Fitzgerald). Pavarotti is shown with such celebrities as Sinatra and Johnny Carson and with such colleagues as Joan Sutherland and Montserrat Caballé, but don't look for pictures of soprano Renata Scotto, with whom he had some big successes and his biggest feud.

There are no pictures in *The Orchestra: Origins and Transformations* edited by Joan Peyser (Scribners, 652 pp., \$50). This is a book for grown-ups, literate grown-ups, music-loving grown-ups. A collection of essays by twenty-three learned contributors, it's scholarly but eminently readable.

In a recent interview in the New York *Times*, Leonard Bernstein commented that he "dreads" a

forthcoming biography of him by Joan Peyser. This set off a wave of jokes in the New York music world about Joan the Dreaded, the Kitty Kelley of Classical Music. Mrs. Peyser is actually a distinguished musicologist, editor, lecturer, and writer—a four-time winner of the ASCAP/Deems Taylor Award for writing on music.

On the dust jacket of *The Orchestra*, musicologist Nicolas Slonimsky says: "This book is an apotheosis of orchestral art which, in the estimation of the learned editor, Joan Peyser, is one of the most fruitful and eloquent of musical developments. Her selection of contributors is excellent; the assembled articles complement one another so that the result is an enlightening history of the orchestra during the last millennium."

Composer David Diamond said, "Joan Peyser's inspiring introduction ignites the spectacular display of informative fireworks with her special brand of generosity and disciplined historical evaluation. It is a huge document of scholarly value

and importance." There are not many musicologists who can get the colored lights going like that. I'm looking forward to the Bernstein book, which is due next year.

For serious music lovers who want to read actual music, not just read about it, Dover publishes inexpensive scores. Reading along while you listen to recordings can be very enlightening and will increase your musical pleasure. Before tackling complex orchestral scores, you might start with solo instrumental works. Dover has just published two volumes of Scarlatti sonatas, *Great Keyboard Sonatas, Series I* and *Series II* (160 pp. each), which cost \$6.50 per volume and could be a suitable place for you to start. Beginning score readers also find vocal works easy to follow because the words help you keep your place. Also new from Dover is a complete score of Verdi's *Otello* (576 pp., \$16.95). For a free copy of the *Complete Dover Music Catalog* of scores and books about music, write to Dover Publications, Inc., 31 East 2nd Street, Mineola, NY 11501. □

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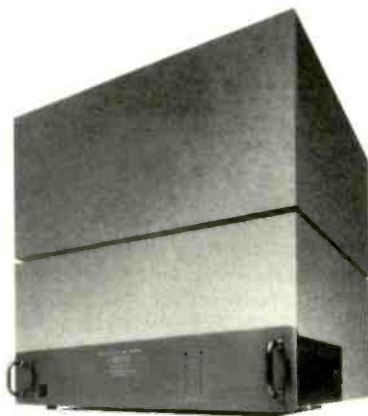
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threw in the towel and conceded Bob the bout. According to the rules... Bob had won."

BRAIN CHALLENGES BRAWN. Below is a photo of the 20-pound, cool-running M-1.0t. Above it are the outlines of the pair of legendary mono



amplifiers used in the *Stereophile* challenge. Even individually, they can hardly be lifted and demand stringent ventilation requirements. And yet, according to some of the most discriminating audiophiles in the world, Bob's new design is their sonic equal.

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by Ian G. Masters



Gold Connectors

Q My new audio system uses conventional input and output jacks, but I am aware that many audiophiles believe gold ones provide better contact and reduced signal loss, especially close to the ocean. Would you recommend having the jacks in my equipment replaced with gold ones?

ED CROW
Anaheim, CA

A Gold has long been used for the best electrical contact, and if you are concerned about corrosion you could probably have your jacks replaced for relatively little cost. But it seems to me more trouble than it is worth. The benefits of gold connectors in audio are in many cases more theoretical than real, because it is rare to find internal contacts made of the same material, and these are just as subject to corrosion as the more accessible ones. By and large, you can maintain good contact simply by removing and reinserting the plugs every so often to scrape off the contaminating material.

The Lifespan of a CD

Q How long will the data encoded on the aluminum surface of a compact disc last before the molecular structure of the metal begins to re-form, or "heal," causing a degradation of the recorded information?

MICHAEL E. SVACO
Scottsdale, AZ

A I confess that this is a new one! Be reassured: the metal is only there as a reflective surface; the actual pits that carry the digital information are in the transparent plastic material, and there is no evidence I am aware of that this ever "heals."

Speaker Care

Q How long should a pair of speakers last, playing at their rated wattage? Must I replace the drivers or crossovers every so often?

GEORGE DOLACK
Passaic, NJ

A There's no reason a pair of speakers shouldn't last virtually forever, as long as they really are playing at their rated power. And you should never need to replace any components in a speaker as a matter of routine maintenance. Manufacturing defects aside, about the only things that will do a speaker in are physical abuse and extreme mismatches of power. You can "blow" a speaker by feeding too many watts to it over too long a period of time (tweeters are particularly susceptible to this), although this is, in fact, a relatively rare occurrence. Much more common is damaging a speaker by underpowering it. An amplifier that is driven beyond its capabilities will produce all sorts of unwanted distortion products that can destroy drivers (again, particularly tweeters). As long as you have matched your speakers and amplifiers properly to begin with, you need not worry about maintenance.

Wet-cleaning Records

Q Many of my records, which are clean and scratch-free, sound terrible when played after several months of non-use. I always store them vertically in their sleeves and prepare them before playing with a liquid cleaning system. Am I doing something wrong?

ERIC DEVIRGILIS
Waverly, PA

A Yes. You are ignoring the first law of Earl Butz—"If it ain't broke, don't fix it"—by overcaring for your records. Most records need heavy cleaning only rarely, so you should reach for the magic fluid only when the noise gets out of hand and not before. For day-to-day playings, a careful brushing will do, preferably followed by an antistatic treatment (the brushing may get rid of the dust but will probably induce a strong static charge in the process, which may attract more dirt than you have removed).

Liquid cleaners are very effective for

getting rid of accumulated grunge, but some of them can contribute to a distinct muddying of the sound if the record is played immediately afterwards. This effect seems to be temporary, fortunately, but is disturbing nonetheless. My own practice is to wet-clean records as a last resort, and then put them back in their sleeves for a few days to dry thoroughly before committing them to the turntable.

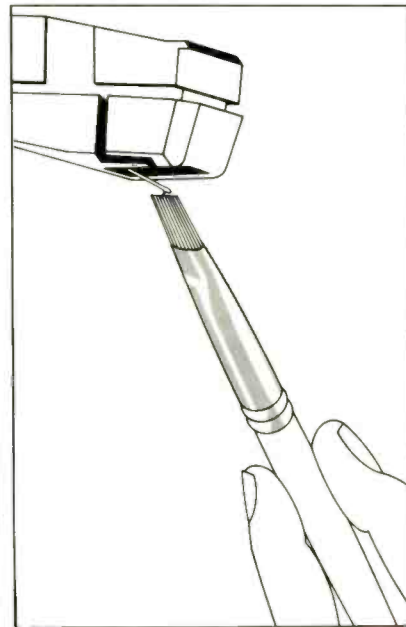
Replacing Styli

Q About a year ago I purchased a top-of-the-line moving-coil cartridge. It has been my custom to replace styli once a year to prevent inordinate wear of my records, but now I discover that a whole new cartridge is necessary—the manufacturer will not replace the stylus on this particular model. I like the sound of this cartridge, but on my salary I can't afford to shell out a large sum of money every time the stylus needs replacement. What do I do?

GEO. A. J. PORTHAN
Soudan, MN

A Relax. While occasional replacement of your stylus is definitely worthwhile, it need not be an annual occurrence unless you subject your equipment to unusually heavy wear. Opinions differ as to just how long you should wait before discarding an old stylus, but you can probably count on a minimum of 1,000 playing hours before serious wear sets in. To get to that level in a year, you would have to have

A fine camel's hair paintbrush is excellent for cleaning styli.



NINA WALLACE



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AUDIO Q. AND A.

almost three solid hours of use *every day*—not including times when the stylus is out of contact with the groove. That may not seem like a lot, but it is.

From my experience, I expect you'll get several years of trouble-free use out of your present stylus if you take some elementary precautions. First, make sure your tracking force is light enough not to wear your records unduly but

heavy enough to prevent mistracking (momentary loss of stylus-to-groove contact), which will do far more damage than ordinary wear. Next, keep your records clean, as dust can hasten the death of a stylus. And be extremely gentle in moving the stylus in and out of the groove, to prevent chipping.

Have the stylus checked under a dealer's microscope every now and then—

every six months, say, if your use is heavy. If you begin to see wear, *then* get a replacement, not before. You may find you are ready for a new cartridge for other reasons long before the stylus gives out. Listen to some other cartridges. I'm sure you'll be able to find one you like from a company that offers replacement styli.

Cable Lengths

Q I'm about to purchase a hi-fi VCR, but my television set is located about 20 feet from my stereo system. Can I run patch cords that far without significantly degrading the signal?

RICK HALTER
Warren, MI

A Probably not, but why bother? The simplest solution would be to locate the VCR with the stereo system, keeping the cables appropriately short. The 75-ohm video cable that connects the VCR to the TV set will not suffer any signal degradation at 20 feet. I've always found, anyway, that it's more satisfactory to operate a videocassette recorder where I can see the set comfortably (across the room) than right on top of it.

Dolby Dubbing

Q When dubbing a Dolby-encoded tape, should I decode and re-encode, or should I shut off the noise-reduction system on one or both decks?

AL STANTON
Grand Junction, CO

A It might seem reasonable to reduce the amount of processing a signal has to go through by keeping the Dolby circuits inactive during dubbing, and this would indeed be true if the two machines were *precisely* matched as to level. But this is almost never the case. In operation, the Dolby system is level-dependent: the recording and playback levels must be matched to a narrow tolerance or "mistracking" will occur. If the playback level is too low, the high frequencies will roll off; if the level is too high, the resulting sound will be too bright.

All of this is (or should be) taken care of by the manufacturer in designing a cassette deck, but when two decks are involved, the level differences between the units will affect the Dolby tracking. It's much safer, therefore, to rely on the integrity of the individual decks by decoding and re-encoding, in spite of the extra processing this entails. Disabling the Dolby circuits of one deck, but not both, would be an even worse solution than taking a chance on the two machines being matched in level.

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AIWA CT-X500II

by Julian Hirsch and Michael Smolen

THE Aiwa CT-X500II AM/FM receiver and autoreverse tape player features what the company calls a Stereo Total Operation Panel (S.T.O.P.). Most of its operating controls are on the inside of a hinged door that swings down to reveal the display window, cassette loading slot, and several less-often-used controls. With the door up, the front of the unit is completely covered and appears as a featureless black plastic plate—a “hidden radio” design that serves to discourage thieves as well as protect the radio and its cassette opening from dust.

As a further safeguard against theft, the CT-X500II mounts in a sleeve that fits into a standard DIN dashboard cutout. All power and signal connections are made through a socket on the rear of the mounting sleeve, and pressing two small buttons on the panel allows the radio to be removed when you leave the car.

The lower half of the S.T.O.P. panel contains a number of soft-touch pushbuttons. Their functions include radio tuning and band selection, volume adjustment, and all tape-deck operations. When any button is pressed an audible beep is emitted. Unlike any other head unit we have ever seen, the portion of the panel containing most of these

buttons can be slid out and used as a wireless remote control.

On the main panel, large luminous numerals in the display window show the tuner frequency or the time and, if applicable, the preset channel number. Smaller lights identify the band and the presence of a stereo subcarrier. Below the display are buttons for storing station frequencies, switching between local/DX sensitivity, and activating the Dynamic Super Loudness loudness-compensating circuit. All buttons on the main panel are clearly marked and light up when engaged. The cassette loads edgewise, and the direction of tape play is indicated by green arrows to the right of the opening. The autoreverse tape transport disengages the pinch-roller when the radio is shut off.

Although the Aiwa CT-X500II has a built-in stereo power amplifier, each channel is rated to deliver only 4.4 watts into a 4-ohm load from 150 to 17,000 Hz with no more than 0.8 percent total harmonic distortion. The radio also provides line-level outputs for driving external power amplifiers. Alternatively, an external stereo amplifier can be used for either the front or the rear speakers, with the built-in amplifier driving the other pair. Price: \$599. Aiwa, Dept. SR, 35 Oxford Dr., Moonachie, NJ 07074.

Lab Tests

The FM tuner's mono usable sensitivity of 14.5 dBf was almost exactly as specified by Aiwa. The FM frequency response showed a slight rolloff below 100 Hz, but the channel separation was a relatively uniform 30 to 35 dB over almost the entire audio range. The channel separation remained in the 25- to 30-dB range down to 35 dBf, but it decreased rapidly to about 10 dB at 25 dBf and to 2.5 dB (essentially mono) at 15 dBf. The stereo indicator light came on at only 4 dBf, far below the useful lower limit of the tuner's sensitivity.

Both the muting and stereo transitions were very gradual, and no threshold levels could be measured. The AM rejection, a fair 44 dB at 65 dBf, improved to a very good 67 dB at 45 dBf. Our selectivity measurements produced surprising results. The very good 70-dB rating for alternate-channel selectivity was far surpassed by a superb 85-dB measurement. The adjacent-channel measurement of 39 dB was too good to be true, however, leading us to suspect some sort of interaction with the tuner's AGC system.

We measured the audio frequency response through the FM tuner input by modulating our signal generator. The “flat” response was ± 1 dB from 70 to 14,000 Hz, falling to -6.5 dB at 30 Hz. Although the manufacturer describes the Dynamic Super Loudness circuit as differing from traditional loudness compensation, the major difference was that it introduced a fixed response change independent of the volume setting. It produced a rising response below 200 Hz, to a peak of 8.5 dB at 80 Hz, and a 12-dB-per-octave drop below that frequency.

Like many car radios, the CT-X500II has confusing and unrealistic power ratings. Although the maximum power output is given as 8 watts per channel, this was only attainable by hard clipping that produced a square-wave output. The more realistic rating is given as 4.4 watts into 4 ohms, which corresponds to about 2.5 watts into 8 ohms. Our measurements confirmed these figures, with distortion readings of about 0.25 percent at all levels (this included the distortion

of the FM tuner section, at reduced modulation levels).

The cassette player's frequency response, measured using IEC standard test tapes, also fell off below 150 Hz, to a minimum of about -10 dB at 40 Hz. The high-frequency response was markedly better with 70- μ s (chrome/metal) equalization than with 120- μ s (normal) equalization, indicating a combination of equalization and azimuth-alignment errors. There were also appreciable response differences between the forward and reverse playback directions, especially with the 70- μ s equalization. A 250-nWb/m level from a test tape produced a +3-dB indication on the receiver's level indicators. Crosstalk between tape tracks was -42 dB at 1,000 Hz. Tape signal-to-noise performance was excellent, and it was improved by 1.5 dB by 70- μ s equalization.

The wireless remote control has a rated range of 15 feet when it is facing the signal-receiving window on the radio, less when it is at an angle to the window. We confirmed these figures. In a simulation of a passenger's seat location, almost at right angles to the radio panel, the controller worked properly up to about 3 or 4 feet away. Satisfactory operation should be possible from any part of an automobile's interior.

In spite of our generally favorable reaction to the Aiwa CT-X500II, there were some aspects of its handling or operation that we found questionable. The volume-adjustment steps varied widely, with no apparent logic to the incremental differences; the tuning buttons sometimes operated on the first touch and at other times needed two or three operations to step through a single channel increment.

Our final "question mark" concerns the minuscule power amplifiers of the CT-X500II. We cannot imagine that anyone would buy a receiver of this price and sophisticated design and settle for amplifiers of such undistinguished performance and power. It seems to us that omitting the power amplifiers entirely would have lowered the price and made the unit attractive to a greater number of people.

Despite these criticisms, the Aiwa CT-X500II is a fascinating, ingenious, and feature-laden product

FEATURES

- Removable wireless infrared remote control built into hinged control panel
- Digital-synthesis AM/FM tuner
- Signal-controlled channel blend, high-frequency rolloff, and soft muting
- Autoreverse cassette player
- Music Sensor for automatic playback from beginning of current or next selection
- Key-off pinch-roller release
- Six AM and six FM presets
- Local/DX sensitivity switch
- Dolby B and Dolby C
- Switchable tape equalization
- Switchable loudness compensation
- Slider controls for fader, balance, and tone
- Line-level outputs for driving front and rear stereo amplifiers

LABORATORY MEASUREMENTS

FM mono usable sensitivity (75-ohm input): 14.5 dBf (1.45 μ V)

Mono 50-dB quieting sensitivity (75-ohm input): 11 dBf (1 μ V)

Tuner signal-to-noise ratio at 65 dBf: 69 dB

Tuner distortion at 65 dBf: 0.42%

FM frequency response (-3-dB limits): 47 to 18,000 Hz

Stereo separation (at 65 dBf) at 100, 1,000, and 10,000 Hz: 33, 34, and 32.5 dB

Capture ratio at 65 dBf: 2.5 dB

AM rejection at 65 dBf: 44 dB

Selectivity: alternate-channel, 85 dB; adjacent-channel, 39 dB (see text)

Image rejection: 60 dB

AM frequency response: 21 to 3,200 Hz +6.5, -6 dB

Tape playback frequency response (standard IEC test tapes): 120- μ s

EQ, 31.5 to 18,000 Hz +0.5, -17 dB forward and +0, -11 dB in reverse; 70- μ s EQ, 31.5 to 18,000 Hz \pm 2.3 dB forward and +1, -9 dB in reverse

Tape signal-to-noise ratio

(A-weighting, referred to 250 nWb/m at 315 Hz, 120- μ s EQ): Dolby out, 58.5 dB; Dolby B, 67 dB; Dolby C, 73.5 dB

Flutter: 0.075% JIS-weighted rms; \pm 0.11% CCIR-weighted peak

Tape speed accuracy: +0.75% at start, +0.1% at end of C-60

Tone-control range: +8, -18 dB at 100 Hz; +7, -18 dB at 10,000 Hz

Maximum line output (into EIA load): 1.0 volt (100% FM modulation)

Power output at clipping: 4-ohm load, 4.4 watts; 8-ohm load, 2.5 watts

with generally good performance. Its S.T.O.P. design will make it a less likely target for thieves, its remote control works very nicely, and its overall human engineering is first-rate. *J.H.*

Road Tests

Installing the CT-X500II in a Toyota SR5 took a little less than an hour. Fortunately, it fit into the dashboard with only a minor amount of sanding applied to the existing cutout. The wiring harness was plainly marked, and the wire ends were already stripped and soldered. I was able to make the unit slide in and out of its Bensi-type housing more easily by rubbing a little soap in the guide grooves.

Although all the radio functions, except the six presets, and all the tape functions are on the wireless remote control, most of the controls that are used less frequently—the tone controls, the Dolby and equali-

zation buttons, the local/DX control, and the fader and balance sliders—remain on the faceplate. All of the pushbuttons felt solid to the touch, although the tone, balance, and fader sliders performed accurately but were too small for comfortable use.

For a unit in this price range and with so many features, the CT-X500II had a few very annoying quirks, the worst of which was the volume control. It is operated by successive touches of a soft-touch pushplate, and the increments by which the volume increased and decreased were far too large, often making it impossible to find a comfortable listening volume. And the VU level indicators were pointless, remaining pinned on any cassette I played.

The rest of the test system I used included an 80- and 60-watt-per-channel (front and rear) Concord amplifier and two pairs of AR 1CS

speakers mounted on the rear deck and in the front door. I also used a Recoton CD adaptor (CD-20) to plug my Sony D-7 into the system.

The sonic performance of the Aiwa CT-X500II was excellent. Quiet new age CD's delivered the range and punch I've come to expect from the CD format, and the sound from rock and classical discs was about as good as I've ever heard in the car. For example, the powerful high end and deep-bass content of Mark Isham's "Film Music" was particularly gratifying, and the strong midrange content of Windham Hill's new "Piano Sampler" was reproduced with authority.

The FM performance of the CT-X500II was well above the average I am used to. Strong stereo and mono signals were solid and clear, accompanied by a silent background. Stereo separation was excellent, although it degraded noticeably as sig-

nal strength dropped. As with many other high-performance car tuners, in poor signal conditions the blending and muting circuitry made the sound essentially mono. Aiwa's engineers opted for clarity and quietness over wide stereo separation, an intelligent decision for car stereo.

I was very impressed with the tape-handling performance of the CT-X500II. Even under a barrage of adverse road conditions, the transport never failed to perform well. The Dolby B and Dolby C noise-reduction systems worked well too, with Dolby C providing the extraordinary quieting so critical in cars.

During my test drives, I was also surprised by the outstanding performance of Aiwa's Dynamic Super Loudness circuit. As Aiwa claims, this circuit differs from traditional loudness compensation by providing rich, realistic bass reproduction at *any* volume level, without adding

distortion or artificial tonal qualities. (The user is warned, correctly, to engage the circuit *before* adjusting the tone controls.)

Perhaps you're wondering why I haven't mentioned the performance of the wireless remote control. It worked perfectly well, but after playing around with it for a while, showing it off to friends, and allowing some back-seat drivers to annoy me with it during a long drive, I was still left questioning its purpose. I could see the remote being used in a van or in an installation where the head unit is down low or far from the driver, and it could be another theft deterrent—remove it and nothing works. In any case, I must admit it's fun to have, and I wouldn't give it up.

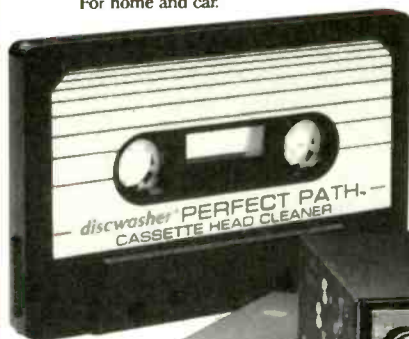
In terms of sonic performance, the Aiwa CT-X500II is a clear-cut winner.

M.S.

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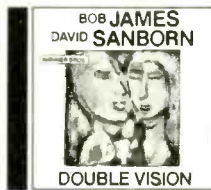
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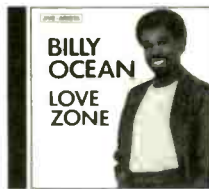
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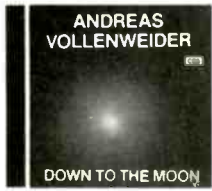
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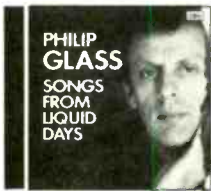
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346312

286914. Fleetwood Mac—Rumours, #1 Hit Album. Includes Don't Stop; more. (Warner Bros.)

346767. Johnny Mathis—Most Requested Songs. (Columbia)

328302. Tina Turner—Private Dancer. What's Love Got to Do With It; Let's Stay Together; more! (Capitol)

337519. Heart. Top 10 Album. What About Love; etc. (Capitol)

339242. Puccini Heroines. Eva Marton, Renata Scatto, etc. (CBS Masterworks)

321570. Beethoven: Symphony No. 5; Schubert: Symphony No. 8—Lorin Maazel, Vienna Phil. (Digital—CBS Masterworks)

345207. Buddy Holly—From The Original Master Tapes. (MCA)

263293. Bolling: Suite For Flute & Jazz Piano—Rampall, Bolling (CBS Masterworks)

324822. Ravel: Bolero; Rhapsodie Espagnole; etc. Maazel, Orch. de France (Digital—CBS Masterworks)

314443. Neil Diamond's 12 Greatest Hits, Vol. 2. You Don't Bring Me Flowers (with Barbra Streisand); etc. (Columbia)

346809. Dvorak: Symphony No. 9 "New World"/Carnival Overture. London Phil. Orch. (Verese Sarabande)

316604. Tchaikovsky: 1812 Overture; Marche Slave; Beethoven: Wellington's Victory. Lorin Maazel, Vienna Phil. (DIG—CBS Masterworks)

343715. Vivaldi—Four Seasons. Maazel, members Orch. National de France (Digital—CBS Masterworks)

308049-398040. Creedence Clearwater Revival Featuring John Fogerty/Chronicle. Greatest hits. (Counts as 2—Fantasy)

320499. The Police—Synchronicity. Winner of 3 Grammy Awards! (A&M)

322024. Huey Lewis & The News—Sports. Bad Is Bad; etc. (Chrysalis)

340323. Sade—Promise. #1 Smash. (Portrait)

323261. Lionel Richie—Can't Slow Down. All Night Long; etc. (Motown)

339200. Stevie Wonder—In Square Circle. #1 album. (Tamla)

328740. Mozart: Piano Concerto No. 26 (Coronation). Rondos. Murray Perahia and English Chamber Orchestra. (Digital—CBS Masterworks)

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Do you have a credit card? (Check one.) Yes No

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by Julian Hirsch



What Is True Bass?

WHILE most experienced audiophiles appreciate what constitutes genuine bass response in an audio system, many others have rather hazy or downright wrong conceptions of the sonic qualities of different parts of the audio spectrum. Given the mediocre sound quality of mass-market audio systems and speakers, this is not too surprising. Everyone knows that "bass" refers to low frequencies, but how low is "low"? What is the relationship between a number representing a frequency (40 or 100 Hz, say) and the subjective sound we experience when hearing a tone of that frequency?

Part of the problem is that the lowest frequencies, like the highest, are rarely perceived as having a distinct pitch. Much of what people think of as bass is really in the range of 80 to 150 Hz, or what might be described as *middle bass* or *upper bass*. These frequencies can be reproduced by the speakers of even the least-expensive music systems. They are also likely to be found in

almost any type of music. No wonder people tend to think of this octave or so of the audible range when they refer to "bass."

It is perhaps fortunate for everyone that the lowest fundamental frequencies of most musical instruments fall in or above this frequency range. According to *Elements of Acoustical Engineering*, by the late Dr. Harry Olson, only a handful of instruments (principally the organ, accordion, piano, bass tuba, bass saxophone, harp, and double-bass) generate fundamentals appreciably lower than 80 Hz. For some of them, the amplitudes of the lower fundamentals may be much less than those of the first few harmonics, which form the major part of the instrument's audible sound. In such cases, even completely eliminating the fundamental may have little or no audible effect on the character of the sound.

This may seem to suggest that the reproduction of frequencies below 80 Hz or so is unnecessary for full-fidelity performance. I think that any knowledgeable audiophile would refuse to accept that notion, and with good reason, since it contradicts his or her personal experience. Studies made by W. B. Snow more than fifty-five years ago (and referenced in Olson's book) showed that many instruments actually produce frequencies well below their lowest musical fundamentals, in the form of noise or subharmonics of those fundamentals. These frequencies form a natural part of the instrument's sound, and their elimination can be detected by a listener. One of the most interesting results of Snow's work was his finding that

accurate reproduction of *room noise* requires a *greater* bandwidth, at both low and high frequencies, than for *any* musical instrument.

I had come to a similar conclusion (at least as it applies to the lowest frequencies) from my own listening experience before I ever saw Snow's findings. One of the major differences between hearing a live performance and a recording of that performance, no matter how skillfully it was made, is in the reproduction of the hall sound—the totality of the breathing, whispering, and rustling that goes on in any auditorium—as modified by the almost infinitely complex pattern of standing waves and absorbing and reflecting surfaces in the room. When I hear a really fine recording reproduced through speakers whose bass response remains strong to the lowest audio frequencies (20 to 30 Hz), the almost palpable sense of "being there" is unmistakable. And this has nothing to do with the musical spectrum—it is as true for a flute solo as for a full orchestra. Without the lowest octave, it is hard for me to imagine any musical reproduction being *natural*.

No one would argue with the statement that the octave from 20 to 40 Hz is "real bass." It is also exceedingly rare in home music systems unless they are augmented by a good subwoofer system. Fortunately for our peace of mind, most of us have learned to accept the absence of this octave and find the sound quality of our systems reasonably satisfactory with a low-frequency cutoff at perhaps 45 or 50 Hz. Many (perhaps most) recordings have little real musical content below 60 or 70 Hz.

There are valid practical reasons for limiting the low end of LP recordings, although these do not apply to CD's. There are also good reasons for designing most speakers with a low-frequency cutoff at 50 Hz or higher. Probably not entirely coincidentally, most moderately priced speakers have a falling response below 60 to 80 Hz or thereabouts, although their actual performance in a given room is very much a function of the room's dimensions, its acoustic treatment, and the placement of the speakers and listeners.

Tested This Month

Magnavox CDB-650
Compact Disc Player
Polk SDA-2A Speaker
Nakamichi SR-3A
AM/FM Receiver
Dual CS 5000 Turntable
Soundcraftsmen Pro-Power
Four Power Amplifier
Sansui D-705 Cassette Deck

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Listen to your favorite musicians on a portable radio. Now sit three rows back from the stage at a live concert.

The difference is dimension: Width, depth, breadth and detail that turn flat sensory input into breathtaking reality. They're the missing ingredients of live musical performance that Sonic Holography restores to records, compact discs and even hi-fi movie soundtracks.

The most experienced and knowledgeable experts in the audio industry have concurred. Julian Hirsch wrote in *Stereo Review*, "The effect strains credibility — had I not experienced it, I probably would not believe it."

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."

All this with your existing speakers and music collection.

HOW SONIC HOLOGRAPHY WORKS. Unfortunately, conventional stereo cannot isolate the output of left and right speakers and send their output only to your left and right ears. Left and right versions of a sound occurrence also cross in the middle of your listening room, confusing your ears with additional extra sound arrivals a split second apart. Stereo imaging and separation suffer because both speakers are heard by both ears, confusing your spatial perception.

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

by creating a third set of sound arrivals. These special impulses cancel the objectionable second sound arrival, leaving only the original sound from each loudspeaker.

The result is a vast sound field extending not only wider than your speakers, but higher than your speakers as well. Sounds will occasionally even seem to come from behind you! It is as if a dense fog has lifted and you suddenly find yourself in the midst of the musical experience. Or, as the Senior Editor of a major electronics magazine put it, "When the lights were turned out, we could almost have sworn we were in the presence of a live orchestra."

IMAGINE THE POSSIBILITIES. Thanks to VHS and Beta Hi-Fi stereo soundtracks (found even on rental tapes), and the increasing number of stereo TV broadcasts, Sonic Holography can put you inside the video experience, too.

It's a breathtaking experience. Without the need for additional rear speakers, extra amplifiers or decoders, the visual experience is psychoacoustically expanded by lifelike sound that envelops you, transforming stereo from monochromatic flatness into vibrant three-dimensional reality. Instead of being at arm's length from the action, you are immersed in it.

Then there are the familiar audio sources which Carver innovation has further improved upon, each of which gains character and heightened impact through Sonic Holography.

Compact discs, whose potential is still trapped in the two-dimensionality of conventional stereo, are even more lifelike with Sonic Holography.

Thanks to the Carver Asymmetrical Charge-Coupled FM Detector, FM stereo broadcasts can be received hiss- and interference-free, ready to take on an astonishing presence and dimension through Sonic Holography.

Even AM stereo can actually become a three-dimensional phenomenon with Sonic Holography and the new Carver TX-11a AM/FM tuner which delivers AM stereo broadcasts with the same dynamics and fidelity as FM.

ENHANCE YOUR SPATIAL AWARENESS WITH CARVER COMPONENTS. When considering the purchase of a new preamplifier or receiver, remember how much more you get from the Carver 4000t, C-1 and Receiver 2000. Or add Sonic Holography to your existing system with the C-9 add-on unit.

Each can transcend the limits of your listening (and viewing) experiences by adding the breathtaking, spine-tingling excitement that comes from being transported directly into the midst of audio-video reality.

Visit your nearest Carver dealer soon and expand your range of experiences with Sonic Holography.



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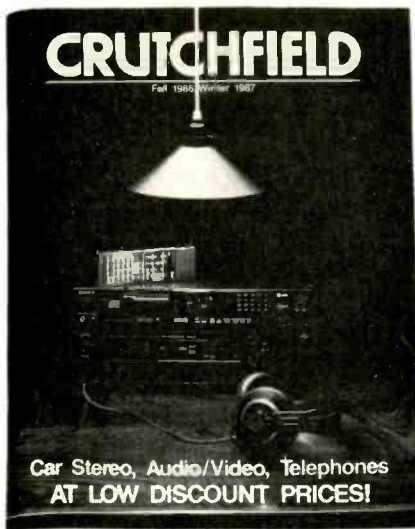
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CRUTCHFIELD

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TECHNICAL TALK

Our room-response measurements indicate that even speakers whose close-miked bass response rolls off below 80 Hz often have an appreciable output an octave lower in frequency. So we see that even affordable speakers may well be capable of reproducing almost all of the frequency range of almost any orchestral instrument. In fact, unless you have heard the difference that results from adding another octave or two to the bass end, you will probably never miss it.

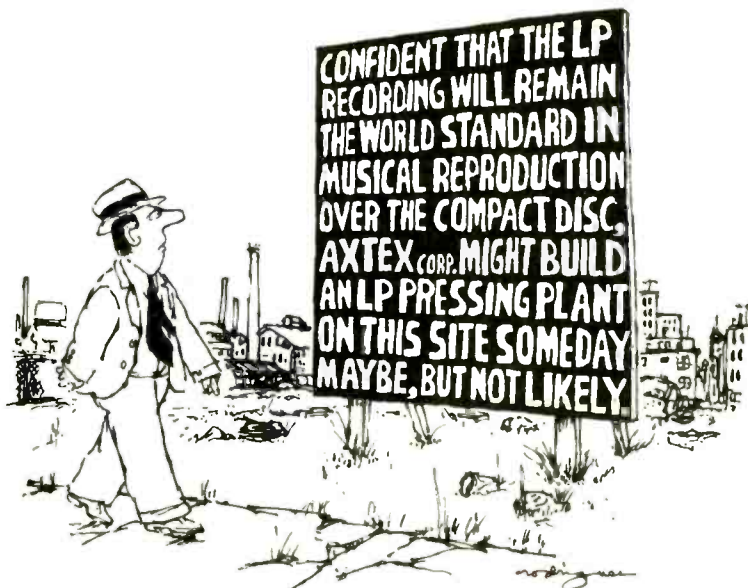
There is yet another aspect of loudspeaker bass performance that listeners should be aware of. Almost all woofers have a resonant rise in their output, which may peak anywhere from 60 to 150 Hz, depending on the size of the speaker system and its design parameters. Smaller speakers will usually peak near the upper end of that range, and for many people this peak conveys a sense of bass that is really not there. It also imposes a boxy, or chesty, sound on most male voices. When this peak is an octave lower, around 80 Hz, it usually adds some warmth to the sound, especially if it is only about 3 dB or so in amplitude. A larger peak simply makes the sound tubby and heavy.

When the peak is around 60 Hz (or lower), the effect is quite different. Here a small rise in output may be undetected, being masked by the irregularity normally introduced by

room resonances. Even a larger peak of several decibels will not usually color the sound of either voices or instruments, since it is well below the lower limits of the former and most of the latter. It may, however, add a welcome sense of "bottom" to many recordings.

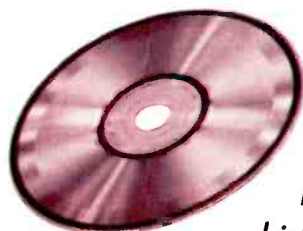
These bass-response peaks are not necessary or inevitable. It is possible to design a speaker with a reasonably uniform bass response, whether it goes down only to 80 Hz or all the way to 20 or 30 Hz. Aside from the possible restoration of some room ambience, extended flat bass response should not affect the overall sound at all until those lowest frequencies appear in the music. But when they do, you will know it! The pressure in your ears, against your skin, or on the soles of your feet is one of the most intriguing products of a strong deep-bass response, and for many people it justifies the expense of speakers with that capability and the sacrifices in room decor that such speakers may require.

The response down to 80 Hz or so is bass, but only a part of it. If your system can reproduce the 40- to 50-Hz fundamentals without strain or audible distortion, you have genuine bass, although still not all of it. And if your system can reproduce the 20- to 30-Hz fundamentals at a useful level, you have *true* bass, by my own arbitrary definition. □



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CIRCLE NO. 26 ON READER SERVICE CARD



3-D TV?

Forget special glasses. Now your home TV viewing can become a theatrical experience. You can tune in up to 140 cable and antenna channels in true MTS Stereo, and listen to them explode in your living room through the included 2-way shielded speaker systems when you use this amplified TV/Cable Tuner.

By Drew Kaplan

Save your TV. Save your monitor. Now you can add 140 channel tuning, with True MTS Stereo, SAP, Simulated Stereo, and Amplified Sound that's guaranteed to knock your socks off.

With the networks' programs switching to stereo, you're in for a real experience! Stereo, powerfully reproduced through 2-way speaker systems rather than a typical 3 to 5" TV speaker, involves you emotionally in what you're viewing.

No, you won't have a real 3-D picture. But, the effect of sight and sound will seem like 3-D when you see a jet fly across the screen and hear it fly across your room, or when you see and hear a boulder or a person rushing toward you.

It's really thrilling. And after watching it for a few weeks, I can tell you that the effect seems to make your TV's picture seem bigger, because you're involved.

Of course with this advanced tuning system, you might just be receiving a sharper picture, and that helps too.

If you're like me, you already have perfectly good TVs in your home. And, if you've looked at the prices on Stereo TVs, you probably got a shock.

Besides, stereo TVs typically have speakers built-in. So, they are very close together. With this system, you can separate your speakers up to 6 feet.

You can expect the same wide-field sonic image you get from your stereo system. But, the combination of sight and sound is astounding.

ALL THE CHANNELS

You're in for a selection adventure in programming. Whether you tune in Cable or use your own antenna, you can now have complete wireless infrared remote tuning from up to 25' away. You'll switch channels, control volume and mute.

You'll tune in all VHF channels 2-13, Cable Channels 14 (A) all the way to 71 (AAA). Plus, you'll tune in UHF.

Note: If you're on cable, check with your cable company before viewing anything at all, to see if they require a fee.

This isn't one of the infamous 'Black Boxes' that decodes various 'Pay TV Channels'. On cable, most of the programming isn't scrambled, it's just found outside the tuning range of the average TV.

Just push '2' then '4' when you want to watch channel 24. And you can watch 24 on either cable or UHF by just touching the input select button on the remote.

And, look at this. You can assign any stations you want (no limit) a 'Favorite' Status. And, by using the step tuning buttons you can step through only your favorite channels.

I have 4 movie channels on my cable. So, I use the 'Favorite' feature a lot. The large LED display shows you the channel. And, LEDs show when this tuner is receiving Stereo, SAP, or Antenna/Cable.

I'VE KEPT A SECRET

OK, so you've got a great picture, 140 channel capability, and you've got MTS Stereo and SAP. Well, there's more.

The powerfully amplified speaker systems will electrify your TV viewing all the time, because whenever the tuner isn't receiving a stereo signal, it automatically creates a simulated stereo effect.

So, just look at the 'Stereo' LED to know what it's doing. You're in for some wonderful sonic experiences to go along with your multichannel viewing.

And one more thing. If you're not familiar with SAP, it's not a government agency. It's called Separate Audio Programming. You'll probably find that some of your local TV stations broadcast an audio band that normal TVs don't get.

It's not related to the TV picture. It may be music, industrial or educational. You may just find that your entertainment options are considerably broadened.

EFFORTLESS INSTALLATION

It's easy. Just unscrew your antenna or cable connector from the back of your TV. There are 2 inputs on the back of the controller. One is for VHF or Cable, the other is for UHF. (You can switch between the two from the remote.)

Then, use the included cable to con-

nect the Controller to your TV. Finally, plug your TV into the Controller and the Controller into the wall. You can connect your VCR before or after the Tuner.

ANOTHER SURPRISE

If you've got a monitor, you're in for a treat with this tuner. Now you can make it 140 channel cable compatible, and you can enjoy the full MTS stereo thrill.

There are Video as well as Left and Right Audio outputs on this tuner. So, you'll have direct, clean Audio and Video.

Of course, this means that there are TWO sets of outputs from the tuner. So, you can feed a TV and a monitor. You can feed a TV and VCR. And, you can feed the sound to your stereo system if you desire.

It's made by Universal and backed by their standard limited warranty.

GET CABLE, UHF AND VHF ENJOY MTS STEREO RISK FREE

Wait till you hear the sound. It's like switching from a portable AM radio to your full stereo system. It's an awesome experience that's instantly apparent.

If you're not 100% satisfied, simply return it in its original box within 30 days for a courteous refund.

To order Universal's 140 Channel Cable Controller with MTS Stereo, SAP, Simulated Stereo VHF/UHF Switching, Matching Shielded 2-Way Speaker Systems and Video and Stereo Audio Outputs risk free with your credit card, call toll free or send your check for DAK's breakthrough price of just \$199⁹⁹ (\$8 P&H) Order No. 4685. CA res add tax.

Now you can tune in virtually any TV broadcast and listen to the most phenomenally dramatic sound. Plus, you'll have remote control of all functions.



DAK INDUSTRIES INC.

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Any Other Inquiries. 1-800-423-2866
8200 Remmet Ave., Canoga Park, CA 91304

Weird Music?

Now you can listen to music that's coursing through the AC wiring system of your home. It's exciting. It's soothing. It's vibrant. And, it's all around you.

By Drew Kaplan

No, I don't want you to listen to the 60 cycle hum of your AC power. No, I don't want you to listen to a 120 volt blast.

But, if you're like me you're going to find that this 'Weird Music' is really going to end musical frustration. And frankly, I've been frustrated.

As you might expect from reading my catalogs, I have 4 complete music systems in my home, and a very large collection of records, cassettes, open reel tapes and CDs.

One reason I'm frustrated is because I can't listen to my open reel tapes unless I'm at one of my two main systems.

And, if I'm on the patio, in the kitchen, or in the garage, I'm relegated to AM, FM or cassettes on a pocket stereo or portable.

And frankly, I've never taken the time to transfer all my albums, open reel tapes and CDs to cassettes. So, I haven't been able to listen to what I want where I want.

WELL, NO MORE

It may seem weird to plug a speaker into an AC outlet, but a new technological breakthrough has allowed me to listen to any music I choose from my best stereo, anywhere in my home.

The music (or speaking) is transmitted through the AC wiring in my home.

So, instead of running speaker wires all over my house, I just plug in a speaker wherever I want rich, room filling sound.

I really like it. I had always wanted to have wireless speakers in my living room because my wife hates having me run wires everywhere.

In the dining room, we can have uninterrupted music from one of my auto-reverse cassette decks 'piped in' while we entertain guests.

In the bedroom, now I can listen to my old open reel tapes. And in the garage, I can use the continuous programmable playback from my CDs. Of course, my system can transmit AM or FM too.

NOT STEREO AND PROBLEMS

It's not a perfect system. But, you'll be shocked by the magnificent rich sound.

And, installation consists of simply plugging its cable into the left and right tape jacks of your receiver and plugging in the AC power transmitter.

It will have no effect whatsoever on your stereo system.

NOTE: Don't worry about your tape jacks. Extra jacks are provided so you won't lose the use of your tape jacks.



But, it's not stereo. It combines the signals from the left and right channels



and transmits a combined signal throughout your home's electrical system. So, you'll enjoy full rich music anywhere.

You can plug in as many 2-way speaker systems as you wish. And, you can plug them in anywhere in your home, or office, that you'd like vibrant, room filling music.



The 9½" X 4¾" X 6" speakers will knock your socks off with their rich full sound. A 4½" woofer combined with an acoustically designed cabinet really belts out the bass, while a 2½" tweeter easily matches the high frequency response of most traditional speaker systems.

A word about noise. You can virtually forget it. This system is virtually noiseless. It operates on VLF (Very Low Frequency) FM that is virtually unaffected by noisy motors and fluorescent lights.

It will, however, react to wireless intercoms and the BSR's X10 remote control system that we sell. But, the reaction is momentary and not too bothersome.

So, in short, although it's not stereo (you can put two speakers in a room), it's a fabulous sounding way to listen to your favorite music wherever you are.

IT'S PORTABLE

Installation of the speakers consists of simply plugging them in. Then you can adjust their On/Off volume controls.

Each even has a handle on the back so you can take them out to the garage, the patio or even to unattached barns.

As long as you're on the same side of the AC transformer (most houses are), virtually any plug in your home should be a source of your favorite vibrant music.

It's made by Universal Security and backed by their limited warranty.

NON-WEIRD MUSIC EVERYWHERE

RISK FREE

Wait till you hear the quality and depth of the sound. Wait till you listen to your favorite music in the bathroom, guest room, laundry or bedroom.

If you're not 100% satisfied, simply return it in its original box within 30 days for a courteous refund.

To order your Wireless Music System complete with Transmitter, Cables and a 2-Way Speaker System risk free with your credit card, call toll free, or send your check for DAK's breakthrough price of just \$69⁹⁰ (\$6 P&H). Order No. 4631.

You can add as many extra, Dramatic Sounding 2-Way Powered Speakers as you wish. Each is just \$49⁹⁰ (\$4 P&H). Order No. 4632. CA res add tax.

It's big sound wherever you are. Don't just expect boom box quality. You'll have rich deep bass and clean highs. And, best of all, you'll have your favorite music.



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BSR's Endangered Colossus

Prepare for bone jarring bass and dramatically clear highs from these newly developed 15" 3-way 5 speaker systems that nearly missed their chance to charm an audiophile's ear. BSR moved its dbx and ADC divisions into one facility and these speakers almost became orphans. So now, they're yours at a close-out price.

By Drew Kaplan

It's a shame. But, it's also a great opportunity to get a pair of 15" audiophile loudspeakers with the newest in stereo imaging at a market-breaking price.

Imagine a precisely matched mirror image pair of top-of-the-line BSR speakers that can effortlessly recreate the cataclysmic impact of a full orchestral crescendo at full volume and yet offer flawlessly subtle sound detail to 21,500hz.

You'll thrill to thunderous bass all the way down to 26hz. Incredibly rich, full, vibrant sound at low volume will explode with life as you increase the volume.

But before we examine the front speaker complement, the twin overlapping crossovers and the top mounted sonic placement and ambiance speakers, let's see why they were almost orphaned.

You see, BSR, the half billion dollar electronics giant, is the parent company of two of the best names in up-scale audio, dbx and ADC.

Last year dbx developed a new multi-thousand dollar speaker system called the Soundfield One which lets you sit virtually anywhere in your room and have full stereo imaging and terrific sound.

BSR decided to consolidate ADC and dbx into one building (still 2 companies) and put all its speaker efforts into dbx.

POOR JACK

Well, while dbx's engineers were off designing their multi-thousand dollar masterpieces, BSR's Senior Acoustical Engineer (he had been Fisher's Chief Engineer for 10 years during its top end component stereo days), was designing BSR's radically new speaker line.

The revolutionary top of the line 15" stereo imaging pair pictured above will let you enjoy superb stereo imaging without sitting directly in front of your speakers.

But unfortunately, in the consolidation move, BSR's speakers went by the wayside, and so did Jack.

Enter DAK. After a few fearful negotiations and considering the engineering costs BSR had already expended, they agreed to make the speakers just for DAK.

Because there's virtually no BSR overhead left on these speakers, and the R&D was all but complete, we've gotten these speakers for virtually the component costs plus a little BSR labor.

And don't worry about Jack. BSR had him finish the engineering (they really are great people) and they'll pay him a royalty on each speaker we sell. Besides, by the time you read this, Jack is sure to be snapped up as the Chief Engineer at another esoteric audio company.

WHAT'S STEREO IMAGING?

Stereo imagery is the logical separation and interaction between channels. It's the successful creation of a panoramic wall or stage of music rather than the confined, easily located 2 speaker sound. **IT'S WHAT'S INSIDE THAT COUNTS**

Imagine the full thunder of a kettle drum, or the pluck of a string bass being explosively recreated in your living room. BSR's 15" sub-bass acoustic suspension driver will revolutionize your concept of

low clean bass.

Its magnetic structure weighs a thundering 48 ounces. But that's not all. The magnetic field is developed by the rare earth metal Strontium for state of the art massive but flawlessly controlled bass.

A 38mm voice coil with a 200° centigrade temperature capacity, will handle the most demanding digital or analog recordings. And, a new super rigid cabinet design virtually eliminates coloration due to uncontrolled cabinet resonance.

At low volume, the bass will fill in and envelop you. At high volume, your room, your walls and your neighbors will shake. (Not for apartment dwellers please.)



MATCHED PAIRS

The mid-range and high end of BSR's speakers are truly unique. Front mounted 8" polypropylene mid-range drivers provide rich sound while top mounted 5" polypropylene mid-range drivers provide an open, lifelike ambiance.

Front mounted exponential horn tweeters provide awesome brilliance to 21,500 hz, while top mounted tweeters enhance separation because they are mounted to the outside edge of each speaker.

So, this system has a specific left and a specific right speaker. You'll find wide, but interactive separation that will vastly widen your ideal listening area.

The imagery will give the illusion of musicians actually playing in front of you. Your music will take on a three dimensional quality. You'll enjoy superb stereo imagery regardless of each speaker's specific placement in your room.

MORE SPECIFICS

The exponential horn tweeters, both in front and on the top of these systems, employ 25mm rigid phenol diaphragms for stability and accurate response.

Polyamid-imid binders and ferro-fluid coolant allow for a 300% increase in heat dissipation so you can drive the voice coils up to 200° centigrade.

Now, the mid-range. Both the 8" front firing and the 5" top firing polypropylene drivers reproduce the mid-range frequencies like no ordinary speakers.

It's amazing that so many speaker manufacturers simply slap in 5" paper mid-ranges to reproduce what's really the major portion of the sound spectrum.

BSR's 8" and 5" polypropylene mid-ranges are rigid, exacting drivers that deliver incredibly pure uncolored sound.

They have matched 25mm voice coils, also protected by ferro-fluid and polyamid-imid to 200° centigrade. They are driven by powerful barium ferrite magnetic fields.

NOT QUITE FINISHED YET

To prevent phase shift and cancellation, two totally separate crossover networks are employed in these speakers.

All frequencies below 800 hz are directed to the 15" woofer. The front system routes frequencies above 800hz to the 3" mid-range to take full advantage of its superb reproduction capabilities. Frequencies above 3400hz are routed to the horn tweeter.

The top mounted system routes only frequencies above 1200hz to the 5" polypropylene ambient mid-range driver, and frequencies above 3400hz are routed to the top sonic placement tweeter.

There are level controls for both the top and front mounted speakers so that you can voice the speakers to match your musical taste and environment.

Note: Only the top tweeters are mounted at the the edges. The front mounted tweeters are conventionally mounted for acoustical symmetry.

Each speaker is fuse protected for up to 200 watts peak, 150 watts continuous power. You can operate these super efficient speakers with as little as 20 watts.

AND OH WHAT A PRETTY FACE

The speaker systems are 30" tall, 19 1/4" wide and 10 1/2" deep. Their lovely oak wood-grain appearance is enhanced by the dark removable grill cloths that beautifully contrast with the rich wood-grain tones. They're a statement of audio elegance when placed in any room. They're backed by BSR's 2 year limited warranty. **A COLOSSAL DREAM COMES TRUE**

RISK FREE

You'll hear depth of sound at low levels that was previously unobtainable. And yes, when you crank up the volume, your music will explode with realism and drama.

Try these speakers in your own system. Then compare them at any Hi-Fi Store with any pair of speakers up to \$1000. If they don't beat all the competition hands down, simply return them to DAK in their original boxes within 30 days for a courteous refund.

To order your matched pair of BSR top-of-the-line 15" 3-way 5 speaker systems with unique stereo imaging risk free with your credit card, call toll free or send your check for DAK's market-breaking price of just \$298 for the **MATCHED PAIR** plus \$22 for Postage and Handling. Order No. 4352. CA res add tax.

It's a dream system for an audiophile. Sonically pure, thunderously powerful, these BSR speakers will make your future listening years an on-going fabulous, not ear-shaking experience.



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Colossus System Breakers

Even if you aren't into massive foundation-shaking sound, you can benefit from the genetic engineering of the Colossus Family. And, since many system manufacturers make most of their money on the 'included' speakers, get ready for a shock.

By Drew Kaplan

It's true. If you've bought a stereo system in the last 5 years, it's time to take a look at the speakers.

You see, many manufacturers put all their money into the electronics and add basic 1 or 2-way speaker systems.

After all, they sell their stereos based on features. And, it's easier to sell a system with an extra button than with a woofer with a bigger or better magnet.

REALLY DUMB

It's amazing to me that manufacturers don't provide the best speakers possible. Because, quite frankly, I find speakers can account for about 40% of the overall musical quality of your system.

This isn't an insult, but I've refused to use speakers from several large companies when I sell their systems.

So, here's my proposition. Try a pair of the BSR speakers on this page in your current system. If you're not 100% thrilled, simply return them with a note that says, "Drew, you were wrong".

We'll not only refund your money, we'll send you a free gift.

You can bet that I'm pretty sure you're going to like these speakers. After all, they use the same components as the Colossus Speakers on the previous page and were designed by the same engineer.

So, if you purchased top of the line speakers separately, I'd have to compare ours on a case by case basis. But if yours came with a system, I'm confident that BSR's can knock your socks off.

Use your current speakers in your bedroom or some other room. But, for really exciting sound, read on.

THE 10" 3-WAY POWERHOUSES

The 10" Colossus systems with their rare earth Strontium magnetic structures, can reproduce dramatically clean, massive bass down to an impressive 32hz.

A new super rigid cabinet design virtually eliminates coloration due to uncontrolled cabinet resonance. So, these acoustically sealed systems can easily produce more powerful and yet more refined bass than many 12" systems.

Be sure to note the flexible black acoustic rings around the white inner liners of these woofers. They really let these woofers react to the demanding requirements of state of the art bass reproduction.

The mid-range is smoothly reproduced in fine detail by 5" rigid polypropylene mid-range drivers with 25mm voice coils.

Polyamid-imid binders and ferro-fluid coolant allow for a 300% increase in heat dissipation, so you can drive the voice coils up to 200° centigrade.

You can expect stable, accurate, uncolored mid-range that will provide you with full rich sound at low levels and increasing excitement at high levels.

The exponential horn tweeters produce dramatically striking highs up to 21,500hz that will make your music come alive. There are brightness controls so you can sculpture your sound.

The speakers are rated for 90 watts peak and 45 watts continuous power.

These speakers are 23¾" tall, 13¾"



wide, and 8¾" deep. Their rich oak wood-grain appearance which surrounds the contrasting dark grill cloths, will be an elegant addition to any room.



8 INCHES OF RICH POWER

BSR also has rich, powerful 2-way 8" speaker systems. They too use woofers with rare earth Strontium magnetic structures. While they won't shake your foundation, you'll be impressed with the rich full deep bass they produce.

Like their big brothers, they are enclosed in rigid cabinets to prevent bass coloration. Because they are only 8" in size, they can also reproduce mid-range.

And, they too have the flexible black acoustic rings around the white inner liners of the woofers for deep bass.

The response down to 38hz is remarkable for 8" systems. So, don't expect weak bass. And, don't expect weak highs.

You'll have the same exponential horn tweeters as in the bigger Colossus systems for a vibrant exciting 21,500hz

high end frequency capability.

On the floor or in a bookcase, the rich oak wood-grain appearance which surrounds the contrasting grills, will be a beautiful addition to any room. They are 19¾" tall, 11¾" wide and 8¾" deep.

BSR speakers are fuse protected and backed by a 2 year limited warranty.

INFUSE YOUR STEREO SYSTEM RISK FREE

Compare these BSR speakers with your speakers. Listen to the deep rich bass. Then listen to the smooth clean mid-range and the dramatically alive highs.

If you're not 100% satisfied, simply return them to DAK in their original boxes within 30 days for a courteous refund.

To order the 10" 3-way Colossuses with 10" Strontium Woofers, 5" Polypropylene Mid-Ranges and Exponential Horn Tweeters risk free with your credit card, call toll free or send your check for just \$149 FOR THE PAIR (\$14 P&H). Order No. 4638. CA res add tax.

To order the 8" 2-way Colossuses with 8" Strontium Woofer/Mid-Ranges and Exponential Horn Tweeters risk free with your credit card, call toll free or send your check for just \$99 FOR THE PAIR (\$10 P&H). Order No. 4639.

These speakers will bring you years of superb musical sound and add truly elegant visual appeal to any room.



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Computer PT Boat

It's a swift, incisive, 5 pound powerhouse armed with MicroPro's powerful Wordstar Word Processing and Calc Spreadsheet Programs. This 64K briefcase portable is ready to sink battleship sized desk PCs. Add 2 modems, more software and a superb near letter quality printer, and it's a \$1,968 retail value. Price blasted to just \$699.

By Drew Kaplan

Attack wasted time. Work where and when you want. Connected to, or competing with a desk top PC, Epson's portable computer is a perfect main computer or companion to one you have.

And competing with a desk top computer for most applications, is no idle joke. Wait till you read about the power and versatility of this computing system.

At only 5 pounds, including its built-in ni-cad batteries, it fits easily in your briefcase, without filling it up.

So, you can have full word processing, spreadsheet analyses/projections, telecommunications and computing power wherever you are, without having to look for a desk or even an AC plug.

Its full size keyboard is 98.6% the size of a standard typewriter, so your hands won't be cramped after hours of typing.

Its non-glare infinitely adjustable, high resolution, full 80 column, 8 line LCD display with full 25 line access, won't give you eye fatigue.



It has battery backed memory in the form of an instant access RAM disk, which you'll use much like a hard disk.

And, it has infinite capability to store files through its unique on-board micro-

cassette drive which functions more like a floppy disk drive than a cassette drive.

Imagine a microcassette drive with a file directory and high speed access to the beginning of the specific file you want. It knows exactly where each file is.

Now, you'll NEVER waste time when you are stuck waiting, traveling on a train, a plane or sitting in a hotel room.

And, most important. By using normally dead time that gets wasted every day, you'll find you have more free time to spend with your family and friends and to pursue your hobbies. Wow!

So, whether you're a writer and/or a company president as I am, or a student as I once was, this computer will let you be incredibly more productive.

If you're an accountant, which I'm not, you can run spreadsheets and models with the 16,384 cell Calc program.

However, you'll be amazed at how easy it is to use this spreadsheet program and all the things it can do for you. It comes with a great tutorial which will have you projecting your own sales, profit, and more in just about an hour.

Just imagine how effectively you can get your ideas across to clients when you can change variable models of their potential costs or profits right in front of their eyes in their own offices or even at a restaurant while you wait for lunch.

Plus there's a scheduler program for setting up appointments with day by day calendar screens that you can print out.

You can even look at a bar chart that shows how you've planned every 1/2

hour for the next 24 days. It's great for slotting in new appointments.

Of course there's a vast reservoir of programs you can buy or even download for free from electronic bulletin boards by using the included modems.



IT GOES WHERE YOU GO

During the day, you can use it at your desk, in the warehouse or in the field for work. It's simply great for writing, inventory taking or sales forecasting.

At night, take it home to finish a project. Then, you can study your stock portfolio or log onto databases to make airline reservations, check the latest price of gold or the specific history of one of your stocks. You can even get the current S&P Green Sheet Reports.

And, look at this. You can actually
Next Page Please. . .

... Epson Continued look up on-line information about public companies' 10K reports, such as earnings, officers' salaries and trends. Wow, what a great way to keep track of your competition, suppliers and customers!

If you're a student, you'll find a wealth of research information available through your modem on thousands of diverse subjects. There are lots of group forums on-line to help you with educational research. Plus, when you're through studying, you can even log onto a computer dating board and choose your ideal mate.

And look at this bonus. If you're at all shy about using modems, we've included a \$39 value (we sold it for \$24) CompuServe Membership Package, complete with a full manual and \$25 worth of free on-line time.

While many bulletin boards are free, you'll find that learning your way around CompuServe with \$25 worth of free time, will give you a good solid knowledge of how to get the information you want from bulletin boards across the country.



HOT LINK

You can directly connect this Epson computer to any IBM PC or Clone or virtually any other computer with a serial interface and any standard communication program, simply by using its cable.

You can download (receive) a file from your desk PC to the Epson to take with you, or upload (send) a file from the Epson to your desk PC for your secretary.

In fact, this system is an incredible replacement for a secretary's typewriter. Portable WordStar will let you edit, correct and even move paragraphs or sentences at will. A letter won't have to be re-typed and reproofed if a change is made.

```
not editing
<<< OPERING MENU >>>
D Open a document file      P PRINT a file      I TRANSMIT a file
E Open a non-document file  O COPY a file      C RECEIVE files
L Change logged drive       Y DELETE a file    X EXIT to system

<<< K A I S M R E U D >>>
-Cursor Movement-      -Delete-      -Miscellaneous-      -Other Rebus-
'B char left 'D char right 'G char      'I TAB      'B Repeat      'K Block
'A word left 'F word right 'DEL char up 'V ESCAPE OFF/ON  'D Downscreen
'E line up 'X line down  'T word pt 'L Find/Replace again:  'P Print
-Scrolling-            'T line 'RTURN End paragraph.  'Q Quick
'V up line  'Z down line  'K insert a RETURN  'H display/
'P up screen 'C down screen:  'U Stop a command
```

If you already use WordStar, you know why it's the most popular word processing program in the U.S. If you use another program, don't despair. You can still send the file. You'll just have to use it under the commands of your program.

ALL THE THINGS YOU'LL GET

Epson's 64K Geneva Computer has a suggested retail of \$995. It is just 1.87" high, 11.58" wide and 8.42" deep. It has 3 CPUs. It has 72 keys. Plus 'Number Lock', lets you have a standard 10 key pad for fast entry of numerical data.

No matter where you use Epson's computer, you'll have up to 10-20 uninterrupted hours of computing from its internal ni-cad batteries. Then it will automatically shut down. Even after battery-low shutdown, your memory will be protected by the internal backup battery.

Of course, the AC adaptor/charger is included. So, you can operate from AC or DC to suit your needs.



Geneva's microcassette drive gives you a choice of storing your files on the RAM disk or on microcassettes. The on-board microcassette drive uses standard 30 or 60 minute microcassettes.

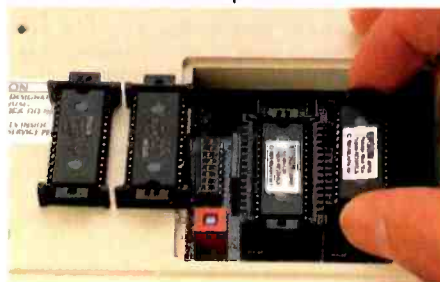
Just one 30 minute tape will store up to 50,000 bytes of information (about 25 pages of text).

And, don't forget, this intelligent machine actually stores a directory at the front of each cassette and in RAM. You can directly access any whole file without having to search a whole cassette.

This computer will power off after 10 minutes if you don't enter data to save its batteries. (Shut off time is adjustable.) Just flip a switch and you'll be exactly where you were when it powered down.

It can use its on-board clock to turn itself on. And, if you type in a password, your information will be secret.

This \$995 Computer comes complete with 4 powerful software programs plus a group of Utility Programs. The programs are stored on ROM Chips that simply slip into either of 2 sockets on the back of the computer.



Again, like a hard disk, these ROM chips are fast and load automatically. You get Portable WordStar, Portable Calc and Portable Scheduler. Plus you get a powerful form of Basic. This system can run virtually any CP/M programs.

You can write very sophisticated programs in Basic. This advanced Basic is so powerful that it even supports such obscure extensions as Inkey\$. And, it supports sound, so you can even finish Schubert's 'Unfinished Symphony'.

Here's just one menu from the Utility Rom.

There are two ports on the back of the Geneva. One is a serial port for the optional disk drive(s). The other is a fully programmable RS232 serial port for the superb printer we have included. Or, you

can use it to communicate with other computers and external modems.

Of the total 64K in this computer, you can actually store files in a 24K RAM disk. The balance of RAM is used for running your programs. But, don't fret, there is lots more RAM and power to come.

THE FLYING WEDGE

A 24K RAM disk may sound like a lot of writing to some. But if you write as much as I do, you're sure to want more:

Another reason for more RAM is that WordStar creates back-up files which occupy memory space.

Back-up files are really great, because if you are editing a file you've written and you really mess it up, you can go back and get your untouched back-up file and start over. So read on for more memory.

Epson makes a \$360 accessory (included) called a Multi-Unit which gives you a 64K RAM disk and leaves all the RAM within the computer free for processing.

It's a small wedge that attaches to the bottom of the computer and doesn't increase its footprint on your desk at all.

And there's more. The 1st modem I described earlier is included inside the Multi-Unit Wedge. It's a 300 baud auto-answer, auto-dial, Tone & Pulse Modem.

It's a terrific modem that comes with a modular phone cable that you plug into any standard phone jack and away you go.

Well you won't go far, since Epson doesn't include a modem program. The modem program is a \$79 value. We've included one that lets you dial in Tone or Pulse, and send or receive files. It's very sophisticated but it's very easy to use.

And oh yes, the Multi-Unit has one more feature. It has a 3rd ROM slot for the Utility ROM. So, you can keep 2 programs loaded in the computer. You can swap ROMs in less than 10 seconds, so it's no big deal, but an extra slot is nice. Once attached, the Multi-Unit actually becomes part of the computer.

GENEVA USER'S GROUP

There is a terrific guy who knows just about everything about the Geneva, including where to find all types of software for more diverse applications.

It's a free bulletin board. If you have a modem now, you can log on by dialing 1-313-538-6968. The SysOp, as system operators are called, can answer questions and even supply you with public domain software.

He's been an incredible help to me and he's got everything from a spelling dictionary to an outline formatter to games. He can even produce ROMs for you or direct you to various bulletin boards you'll find of interest.

Since he doesn't work for DAK, I can't guarantee he'll always be there, but he has been for me, and at least you'll get a running start on doing a whole lot more than you, or frankly Epson, probably ever imagined with this computer.



Here's the 2nd included Modem. It's an external Acoustic Modem. One last word about modems. If you're Next Page Please. . .

...Epson Continued on the road, you may need Epson's \$129 acoustic coupler modem. It fits on pay phone and hotel room handsets (the rounded traditional kind only).

It's a 300 baud modem that you can use with any computer. It has its own internal ni-cad batteries and its own charger. Wow, this is some system.

PRINTER HEAVEN

We've acquired a superb \$299 List Price NLQ (Near Letter Quality) printer from Seikosha, Epson's sister company. It can take single sheet plain paper or letterhead or fan fold computer paper.

And its printing is so good that I think Near Letter Quality doesn't do it justice.

It's fast, quiet and easy to use. It's AC powered. It has a Self Test Mode, Bold, Underline, Condensed and Expanded Type capabilities. It's a superb value at \$299, but to be honest, I've seen it selling for as little as \$199.

This printer is the best NLQ printer I've used. I'm proud to have my important business letters produced on this printer mailed from my office.

I can't overemphasize what a powerful word processing system this is. You can even do text screen dumps (print out exactly what you see on the screen).

AND YOU THOUGHT THAT WAS ALL

Epson didn't include free cables to connect any of these devices, but we have. You'll get a \$29 cable to connect the Geneva to the printer or to your desk top computer.

But, does your computer have male or female Serial plugs? Well I don't know, so we've included a \$19 Gender Bender so you can connect to male or female.

For external modem use, you'll need what's called a Flip (included). It's a \$19 value and it makes Epson's cable suitable for a modem. So, wherever you take your Geneva, you can plug in.



THE BEST FREE PART OF ALL

We've written an easy to understand, step by step instruction book that basically instructs you how to take the computer out of the box and how to plug it in.

Then in step by step detail, you'll get into each facet of its basic capabilities.

Of course, you'll get a massive set of individual instruction and reference manuals from Epson and MicroPro too.

By the way, if you suffer from fear of spreadsheets and modeling, in an hour you'll be a confirmed user. MicroPro's Calc tutorial is fabulous.

WHY SO CHEAP?

It's a terrific \$1,968 system. And, that's just the problem. Epson designed and built very sophisticated equipment. But they relied on salespeople to explain what was needed to consumers.

Many salespeople don't understand why you need each component and what it does. So, only the very sophisticated

consumers who figured it out themselves were able to put together a really productive system.

Enter DAK. Epson was stuck with 6714 computers. We made them a ridiculously low offer (we frankly didn't think they'd accept) for everything. Well, 6714 computers isn't very much to a company the size of Epson, so they accepted.

Then, we sifted through all the components and chose just the most useful, added the printer, the cables and the programs required and slashed the \$1,968 retail price down to just \$699.

Every Epson Component is backed by Epson's standard one year limited warranty. And, the printer is backed by an almost unbelievable 2 year limited warranty from Seikosha.

THE COMPLETE COMPUTER SYSTEM RISK FREE

Wait till you experience the power and your own increase in productivity, as I have. I'm amazed at the amount of work I can get finished in half hour segments if I'm stuck at a restaurant or during unexpected breaks between meetings.

What's even more exciting, is that instead of transferring the work to my PC when I get home, I like the keyboard on the Geneva so well that I'm finishing what I start, right on the Geneva.

Just imagine working at your desk, on the patio or in a hotel room. I actually wrote an ad on a flight from Atlanta to Boston. I'm 100% sold on this computer.

If you're not 100% satisfied with its typing or computing or communications capabilities, simply return it in its original boxes within 30 days to DAK for a refund.

To order your Epson Geneva 64K portable computer complete with Portable WordStar, Calc, Scheduler, Basic and CP/M Utilities, On-Board Direct Access Microcassette Deck, Built-In Ni-Cad Batteries, AC/Charger Adaptor, Extra 64K RAM Disk Wedge with 300 Baud Modem, External 300 Baud Acoustic Modem, Communication Software, NLQ Sheet and Fanfold Printer, plus Cable and Connectors, forget the suggested retail price of \$1,968. Call toll free or send your check for just \$699 plus \$18 for P&H. Order Number 4610. CA res add tax.

OPTIONS

Once you attach the Multi-Unit Wedge or options below, the computer initializes itself to the installed component. So, the following 2 options are instead of, not in addition to, the Multi-Unit.

If you don't need the extra 64K RAM disk memory, you can have the complete system with a Wedge that contains only the Modem for just \$629 (\$18 P&H) Order No. 4611.

If you don't need a modem and you're into writing long novels, we have the complete system less the modem and CompuServe package but with a Wedge that gives you a 120K RAM disk (Wow!) for just \$799 (\$18 P&H) Ord. No. 4612. Note: You can still use an external modem.

For the many people who already own basic Genevas, you can purchase the \$460 retail, 120K RAM disk for just \$200 (\$5 P&H) Order No. 4613.

OPTIONS FOR EVERYONE

For massive storage we have Epson's state of the art 3 1/2" floppy disk drive. It's rated at 320K. It has internal Ni-Cad Batteries and an AC Adaptor/Charger. Ep-

son's retail is \$599, plus \$19 for the Cable and \$17 for the Utility Disk for the drive. It plugs directly into the Geneva's serial port and boots automatically. This \$635 value is yours for just \$189 (\$5 P&H) Order No. 4614. Note: You may connect up to two disk drives.



A box of 10 Double Sided Double Density 320K Floppy Disks is just \$34 (\$1 P&H) Order No. 4615. Note: 3 1/2" disks are the standard format for many of the newest computers.

High Grade Microcassettes for the cassette drive are available in 30 and 60 minute lengths. They come in hard plastic boxes. 30 minute microcassettes are just \$2⁹⁰. (\$0.50 P&H). Ord. No. 4616. 60 minute microcassettes are just \$3⁹⁰. (\$0.50 P&H). Ord. No. 4617.

The Seikosha printer comes with a unique long life ribbon (up to 2 1/2 million characters). Extra ribbons are just \$7 (\$1 P&H) Order No. 4618.

You'll buy or download software as you broaden your computing needs. Epson had some great programs in stock.

You can have Travelers Pack: Time, Appointment, & Expense manager which is fabulous for a lot of reasons. But, if you bill your time, it lets you feed in projects and multiple billing amounts for each client. Each program is on its own ROM and it's a \$139 retail value. It's yours for just \$29 (\$2 P&H) Order No. 4619.

Epson even had a small supply of Ashton-Tate's dBase II on ROMs for the Geneva. It's a sophisticated relational database management program. It's file compatible with desktop dBase II versions. It's a \$469 retail value that's yours for just \$199 (\$3 P&H) Order No. 4620.

Epson also has Ashton-Tate's dBTraveler on ROMs which is a less expensive version of dBase II with most dBase II functions. It's also file compatible with desktop versions of dBase II. It's a \$329 value that's yours for just \$129 (\$3 P&H) Order No. 4621.

As you can see from the above software, the Geneva can run even the most complex, sophisticated programs. It makes duck soup out of most of the standard \$20 to \$99 programs you'll find.

For your desk, your home or for the great outdoors, you'll be able to write, forecast, and compute with mammoth power and in real style. Like a PT Boat, this computer moves in fast and does the job while it lets you escape the chains of traditional deskbound PCs.



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8200 Remmet Ave., Canoga Park, CA 91304

Escort Refuses!

Dear Customer,

From: Drew Kaplan

Escort turned down our \$10,000 head to head challenge described below. Escort says that Maxon's Radar Detector is "primitive", "bottom-end" and "an off-shore produced electronics 'gadget' ". I don't know about you, but to me these words conjure up visions of a cheap toy being produced off in the middle of a rice paddy somewhere in the middle of nowhere.

Escort, on the other hand, which is made in the U.S., exudes a high cost, quality image. Don't you just bet that it costs a fortune to build Escort and Passport (the smaller version)?

Well, we are going to challenge Escort AGAIN to a head to head 'duel to the death' on Maxon's electronic merits alone. And, we plan to win. But first there are a few things you should know.

Cincinnati Microwave, the company that makes Escort & Passport, is a public company. And being public, they have to file financial information with the SEC.

The public information they have published appears to show that in the year that ended Dec. 1985, Cincinnati Microwave with "substantially all of its revenues and profits derived from the sale of radar warning receivers" made an operating profit of about \$45,810,000 on sales of about \$112,605,000. Wow!

The \$45 million profit is after all engineering, selling and General & Administrative expenses, but before taxes.

Their cost of sales (goods) was only about \$40,027,000. So, if you divide \$40,027,000 by \$112,605,000 it doesn't take a genius to figure out that cost of goods represents an average of only about 35.5% of selling price. Wow!

I only bring up their profit to illustrate that a high retail price doesn't always

mean a high manufacturing cost.

There's no question in my mind that Maxon can manufacture cheaper in an off-shore 'rice paddy', but if you pay \$245 for Escort or \$295 for Passport, it should be based on a head to head test with Maxon, not on perceived retail price points.

FORGET PRICE COMPLETELY

So, forget that Escort costs \$245, Passport \$295, and Maxon \$99⁹⁰. Let's judge them on their own merits. And, let's look at just what Escort itself has to say about our challenge. (Please read DAK's and Escort's letters to the right.)

Escort says that, "Regardless of the results, such an event lends credibility to the challenger." Well, they are absolutely correct. That's why I put up the \$10,000 in the first place. Fair is fair.

Plus, there are several radar detectors that claim to have won this or that ranking in "Independent Magazine Reviews." So, I'm ignoring any reviews and asking for a one on one, head to head test.

But look at what Escort says in their letter: "Range is the easiest detector quality to measure, but by no means the only important quality." Wow, I thought range was really important?? Escort refers to "goodness" being determined by things not so easily measured.

Well frankly, I don't know how to measure "goodness". Escort, in my opinion,

is a top notch company. They make a superb product I'd be proud to sell. And, they have great customer service.

DAK has great toll free technical and regular customer service. But, I'd be the first to admit that with over \$45 million in profits, Escort can probably run circles around us in advertising, and maybe even in service. But, I don't think they can beat Maxon's Radar Detector.

HOW GOOD IS GOOD?

When Escort was introduced, it was revolutionary. But, you can only go so far. And in my opinion (someone else might object), radar detecting has gone about as far as it can go. So, while Escort has made improvements, it's Maxon who has moved mountains to catch up.

DAK UPS THE ANTE TO \$20,000

Now I realize that next to \$45 million dollars, \$20,000 isn't much, but it's a lot to DAK. And, I'll even go one step farther. I'll print the exact results of the test, win, lose, draw, or no-show in the first catalog I publish after January 1, 1987.

Escort, the ball is now in your court. Below is the "NEW" version of my challenge with the time and amount changed.

I don't know what else DAK or Maxon can do to prove that the RD-1 Superheterodyne Detector should be judged on its head to head performance against Escort, not on its selling price!

WAS \$10,000

A \$20,000 Challenge To Escort

Let's cut through the Radar Detector Glut. We challenge Escort to a one on one Distance and Falsing 'duel to the death' on the highway of their choice. If they win, the \$20,000 (was \$10,000) check pictured below is theirs.

By Drew Kaplan

We've put up our \$20,000 (was 10). We challenge Escort to take on Maxon's new Dual Superheterodyne RD-1 \$99⁹⁰ radar detector on the road of their choice in a one on one conflict.

Even Escort says that everyone compares themselves to Escort, and they're right. They were the first in 1978 to use superheterodyne circuits and they've got a virtual stranglehold on the magazine test reports.

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

So Escort, you pick the road (continental U.S. please). You pick the equipment to create the false signals. And finally, you pick the radar gun.

Maxon and DAK will come to your highway with engineers and equipment to verify the results. And oh yes, we'll have the \$20,000 check (pictured) to hand over if you beat us by more than 10 feet in either X or K band detection.

BOB SAYS MAXON IS BETTER

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



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

So, since I've never been one to be in second place, I said, "Would you bet

\$20,000 (10) that you can beat Escort?" And, as they say, the rest is history.

By the way, Bob is about 6'9" tall, so if we can't beat Escort, we can sure scare the you know what out of them. But, Bob and his engineers are deadly serious about this 'duel'. And you can bet that our \$20,000 (was \$10,000) is serious.

...Next Page Please

...Challenge Continued

We ask only the following. 1) The public be invited to watch. 2) Maxon's Engineers as well as Escort's check the radar gun and monitor the test and the results.

3) The same car be used in both tests.

4) We'd like an answer from Escort no later than December 31, 1986 and 60 days notice of the time and place of the conflict. And, 5) We'd like them to come with a \$20,000 (was \$10,000) check made out to DAK if we win.

into action in just 1/4 of one second.

Just imagine the sophistication of a device that can test a signal 4 times in less than 1/4 of one second. Maxon's technology is mind boggling.

But, using it isn't. This long range detector has all the bells and whistles. It has separate audible sounds for X and K radar signals because you've only got about 1/3 the time to react with K band.

There's a 10 step LED Bar Graph Meter to accurately show the radar signal's

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



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

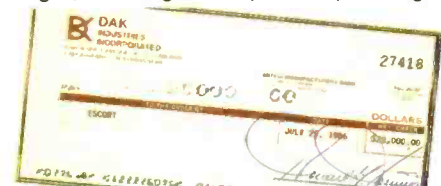
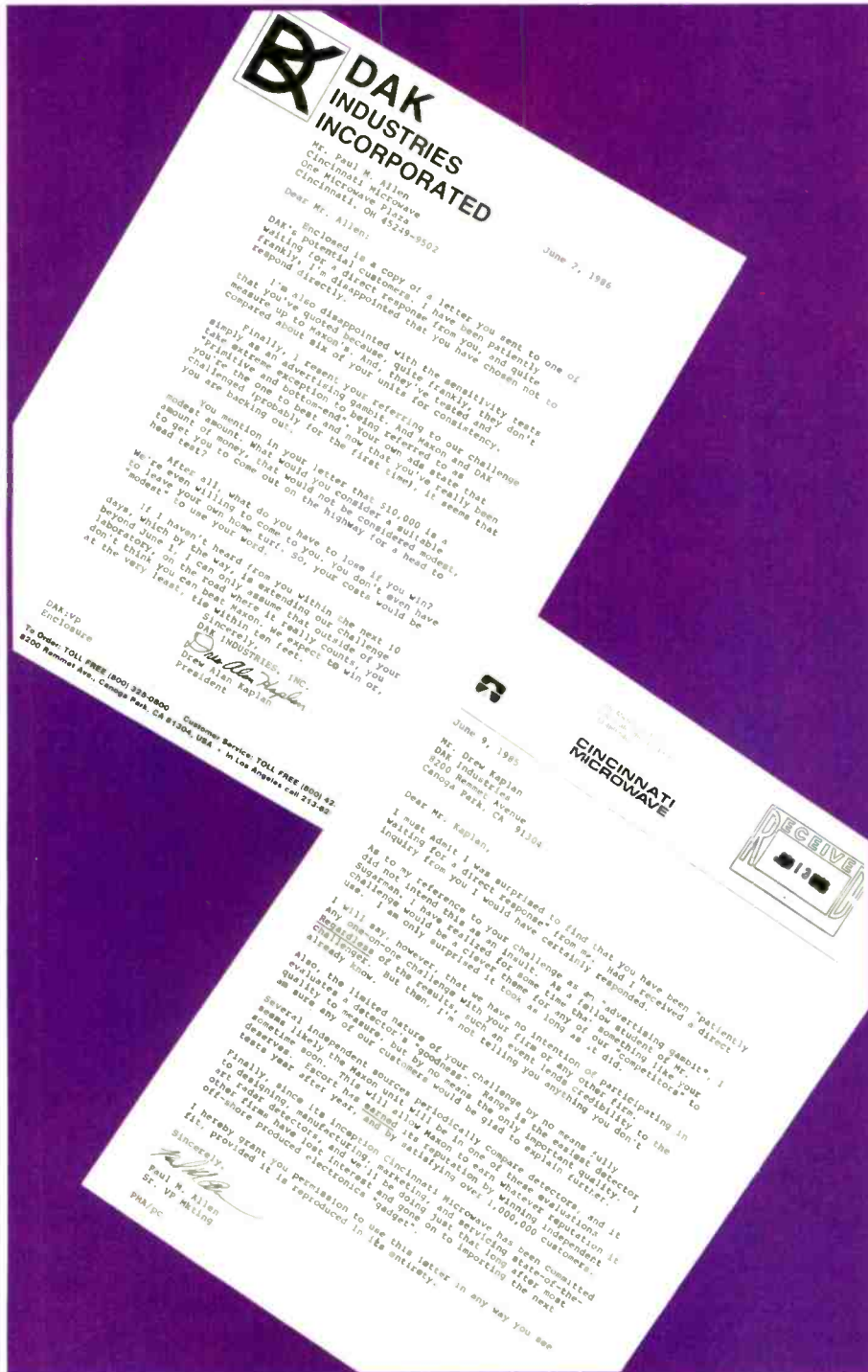
And the key word is 'radar', not trash signals. The 4 test check system that operates in 1/4 second gives you extremely high protection from signals from other detectors, intrusion systems and garage door openers.

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

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

It's much smaller than Escort at just 3 1/2" Wide, 4 3/4" deep and 1 1/2" high. It's backed by Maxon's standard limited warranty. Note from Drew: 1) Use of radar detectors is illegal in some states.

2) Speeding is dangerous. Use this detector to help keep you safe when you forget, not to get away with speeding.



CHECK OUT RADAR YOURSELF RISK FREE

Put this detector on your visor. When it sounds, look around for the police. There's a good chance you'll be saving money in fines and higher insurance rates. And, if you slow down, you may even save lives.

If you aren't 100% satisfied, simply return it in its original box within 30 days for a courteous refund.

To get your Maxon, Dual Superheterodyne, Anti-Falsing Radar Detector risk free with your credit card, call toll free or send your check for just \$99⁹⁰ (\$4 P&H). Order No. 4407. CA res add tax.

OK Escort, it's up to you. We've got \$20,000 (10) that says you can't beat Maxon on the road. Your answer, please? Escort and Passport are registered trademarks of Cincinnati Microwave.

SO, WHAT'S DUAL SUPERHETERODYNE?

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

It's a technology that tests each suspected radar signal 4 separate times before it notifies you, and yet it explodes

strength. And, you won't have to look at a needle in a meter. You can see the Bar Graph Meter with your peripheral vision and keep your eyes on the road and put your foot on the brake.

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

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The new Boston T1000.

A higher level of sonic architecture.

Announcing the Boston Acoustics T1000 tower speaker system. It elevates stereo music reproduction to a new, rarified level of realism. Yet its slender tower architecture requires very little floor space.

We engineered the T1000 in a distinctive new way. Our new midrange driver is large, letting it reproduce far more of the important mid-frequency information than a smaller driver can. In addition, we placed it – and our CFT-5 dome tweeter – in the highest portion of the tower. As a result, all the directionally important mid and high frequencies emanate together at ear level. Just as with live music.

This unique architecture also frees the dual woofers to concentrate on bass reproduction alone. In fact, the Boston T1000 tower system lets you enjoy the entire tonal range of music, including the very lowest octave. With a wide dynamic range that does full justice to digital sources. And with stereo imaging that's pin-point precise.

For a descriptive T1000 brochure, just send us your name and address. Boston Acoustics, Inc., Department ST, 247 Lynnfield Street, Peabody, MA 01960. (617) 532-2111.



MAGNAVOX CDB-650 COMPACT DISC PLAYER

Julian Hirsch, Hirsch-Houck Laboratories

THE Magnavox CDB-650 compact disc player is manufactured by Philips, co-developer of the compact disc system. It uses a combination of advanced integrated circuits and an ultracompact laser assembly to provide exceptional performance together with some unusual operating features.

The low inertia of the CDB-650's laser scanning assembly provides rapid slewing response—average track-access time is no more than 1 second—and accurate control combined with excellent shock resistance. The fully integrated electronic section of the player includes an exclusive Philips single-chip decoder and error-correction system and an improved quadruple-oversampling digital filter (operating at

176.4 kHz), which, in addition to a stopband attenuation of 60 dB, reduces passband ripple to a negligible 0.02 dB. A single digital-to-analog (D/A) converter chip contains two 16-bit D/A converters, one for each channel, which eliminates the need for multiplexing and the resulting interchannel time delay.

The Magnavox CDB-650 is a front-loading machine with a conventional front panel. Large push-buttons control the disc drawer and the play, stop, pause, and fast-search functions. The forward and reverse search controls have three operating speeds. The music remains audible at the two slower speeds but is inaudible at the fastest speed. There are also the usual buttons (here labeled NEXT and PREVIOUS) to move the pickup in sin-

gle-track increments. Unlike most CD players, the CDB-650 requires a second touch on the PLAY/REPLAY button to return to the start of the current track.

When a disc is first loaded, the display shows its total number of tracks and total playing time. During play it normally shows the current track number (and index number if the CD has indexed sections) and elapsed playing time in that track. One of six small program buttons between the main controls and the display window switches the time display to show the remaining time on the disc. Other buttons engage the scan and repeat functions (the scan function plays the first 10 seconds of each track on the disc before proceeding to the next one) and set the start and finish points for repeating any desired portion of a track.

The remaining button, marked FTS, is associated with the most novel feature of the Magnavox CDB-650. The letters stand for Favorite Track Selection, which allows specific portions of a number of



SURGEON GENERAL'S WARNING: Cigarette
Smoke Contains Carbon Monoxide.

16 mg "tar," 1.0 mg nicotine
av. per cigarette, FTC Report Feb. '85

Come to where the flavor is.

Marlboro



Marlboro Red or Longhorn 100's—
you get a lot to like.

FEATURES

- Quadruple oversampling at 176.4 kHz
- Separate D/A converters and digital filters for left and right channels
- Direct access to any track through numerical keypad
- Programmed playback of up to twenty selections in any order
- Three-speed search in both directions, with music audible at two slower speeds
- Skip to beginning of each track in either direction
- Repeat play of entire disc, programmed sequence, or defined program segment
- COPY PAUSE adds 4 seconds of silence between tracks in playback
- AUTO PAUSE puts player in pause mode after each track
- Second pair of output terminals with special low-pass analog filter for "warmer" sound
- Gold-plated phono-jack outputs
- Subcode output connector
- Tape-recorder synchronization output
- Full-function wireless remote control and connector for optional remote-control extension sensor
- Front-panel headphone jack with separate volume control
- Favorite Track Selection to store up to 785 selections from as many as 226 discs in nonvolatile memory for programmed playback

LABORATORY MEASUREMENTS

Maximum output level: 2.1 volts
Total harmonic distortion at 1,000 Hz: 0.0018% referred to 0 dB; 0.008% referred to -10 dB; 0.006% referred to -20 dB
Signal-to-noise ratio (A-weighted): 125 dB
Channel separation: 104.5 dB at 1,000 Hz; 102.5 dB at 20,000 Hz

Frequency response: ± 0.05 dB from 20 to 20,000 Hz
Cueing time: 3 seconds
Cueing accuracy: A
Impact resistance: right side, A; left side, B+; top, A
Defect tracking: tracks all maximum-level defects on Philips TS5A test disc

discs to be programmed into a non-volatile memory for playback whenever any of the memorized discs is loaded. The selected program segments can be whole tracks, indexed portions of tracks, or even nonindexed segments identified by start and stop times. Up to 785 selections can be memorized from a maximum of 226 different discs (the memorized information includes the disc identification code as well as the program selections). Once memorized, the information is available at any time, even if the player has been turned off or disconnected from a power source in the meantime. A memorized program segment can be removed, if desired, by storing another selection in the same location.

The front panel of the Magnavox CDB-650 also contains a four-position slide switch that selects normal play, single-track play, a COPY PAUSE mode, in which the player inserts 4 seconds of silence between tracks (useful for making cassette

dubs for playback on machines that access selections by searching for silent intervals), and an AUTO PAUSE mode, in which the player automatically pauses at the end of each track until play is manually restarted. The front-panel stereo headphone jack has its own volume control.

A small section of the front panel, above the headphone jack and volume control, hinges down to reveal the program keypad. The keys, numbered from 0 to 9, are used to program the machine for playback of up to twenty tracks in any order. They can also be used for direct access to any single track. The hidden control panel also contains a CLEAR key to cancel any selected operating modes or programming, such as when the wrong button has been pressed. These keys are also used with the FTS button for programming the player's memory system. The CDB-650 is supplied with a hand-held infrared remote control that duplicates all of its front-panel

functions except power on/off and disc-drawer open/close.

On the rear apron, in addition to the regular audio output jacks, there is a second pair of jacks carrying signals that have been modified by precision analog filters to add a touch of "warmth" to digital recordings if these are deemed to be on the "cool" side. All of the signal output jacks are gold-plated. A digital-subcode output jack is provided for use with future accessories such as digital sound processors or CD-ROM systems, and a REC(ord) SYNC jack supplies a synchronizing signal to compatible cassette recorders for automatic tape dubbing from CD's. A remote connector can be used with an optional accessory sensor to allow the use of the player's infrared remote-control unit when the CDB-650 is enclosed or located out of direct range. The CDB-650 also has external heat-sink fins on its rear apron, unusual for a CD player.

The Magnavox CDB-650 measures 16½ inches wide, 11⅞ inches deep, and 3⅞ inches high, and it weighs just under 9 pounds. It is available finished in black or silver. Price: \$410. Magnavox/N.A.P., Dept. SR, I-40 & Straw Plains Pike, Knoxville, TN 37914.

Lab Tests

Although many of the specifications of the Magnavox CDB-650 are much tighter than those of other CD players we have seen, it easily surpassed all of them (within the accuracy limits of our measurements). Rarely have we seen the performance of any consumer product specified so completely and with such conservatism.

The most striking characteristic of the CDB-650 was the flatness of its frequency response. We are accustomed to measuring a virtually flat response from any CD player, but the approximately ± 0.05 -dB variation from 20 to 20,000 Hz that we measured from the CDB-650 was not only half its published rating, but quite possibly the flattest response we have ever measured. Even the high-frequency "ripples" in the response curve (which accounted for virtually all the variation we measured) were nearly undetectable.

Since no specific figures were sup-

Teac Compact Disc. HiFi in the extreme.

Teac is not in the habit of building audio equipment for the undiscerning. Rather, we commit ourselves to those few individuals discontented with anything less than the finest recording and sound reproduction equipment money can buy.

Before you stands the remarkable Teac ZD-5000. Perhaps the purest embodiment the compact disc player has yet experienced. A machine with a list of features and specifications so numerous, so advanced as to impress the most jaded audiophile. A machine so refined its output jacks are plated with 24k gold. And when it comes to remote controlled functions, nobody comes remotely close.

The Teac ZD-5000 compact disc player. "Fi" just doesn't get any higher.



TEAC

plied on the "warming" filter used for the player's secondary output, we were curious to see what the resulting response might be. The differences from the untreated main output turned out to be extremely subtle. The response began to slope gradually downward above 4,000 Hz, reaching -0.5 dB at 10,000 Hz, -1 dB at 15,000 Hz, and -2 dB at 20,000 Hz.

The main-channel outputs, measured with a 0-dB, 1,000-Hz test signal, were 2.1 volts, with an imbalance of only 0.04 dB. The shape of a square-wave test signal was typical of the response of a digital filter, though with somewhat less prominent ripple than most. Even at 20,000 Hz, there was virtually no interchannel phase shift between the main output channels. The same could be said for the secondary output channels, modified by additional analog filters. Only at 10,000 and 20,000 Hz could we detect a trace of phase shift (less than 1 degree). Although the audible significance of phase shift at these frequencies has not been demonstrated, these measurements represent an impressive achievement that has not even been approached by any other CD player we have tested.

The CDB-650's noise level was barely detectable on our Sennheiser noise meter—its A-weighted reading was -125 dB relative to a 0-dB output signal. Channel separation was between 102 and 108 dB over the range of 1,000 to 20,000 Hz. The total harmonic distortion was 0.0018 percent at 0 dB, 0.008 percent at -10 dB, and 0.006 percent at -20 dB.

The player had no difficulty tracking the calibrated defects on the Philips TS5A test disc. The slew time from Track 1 to Track 15 of the Philips TS4 disc was 3 seconds, roughly similar to that of most recent CD players. We confirmed the manufacturer's claim that the CDB-650 can access most tracks on a disc in well under 1 second. And the instantaneous transition from Track 17 to Track 18 of the TS4 disc was handled flawlessly.

The headphone output was 12 milliwatts into 8 ohms, 58 milliwatts into 200 ohms, and 38 milliwatts into 600 ohms. The player's

ability to deliver its maximum output into headphones of medium impedance is a plus, since these are the headphones most commonly used. We found the headphone volume to be good. The impact resistance of the CDB-650 was excellent, rating an A on the top and right side, a B+ on the left side near the transport mechanism. It had no problems with fairly vigorous finger tapping but could be made to skip when struck hard with the knuckles anywhere on the case.

Comments

Given the strong performance similarity of most CD players (a logical result of the CD format's strictly defined recording and playback parameters), it is usually difficult to establish any objective order of preference among them. As a rule, features, price, and perhaps the effectiveness of a machine's error-correction system are the prime factors influencing the consumer's perception of relative quality. There is also, of course, the matter of the subtle (and sometimes not-so-subtle) audible quality differences that are claimed by some to exist, but these so far seem to defy *objective* analysis.

If CD players can be said to be equal in most respects, it is nonetheless true that some are "more equal than others." In our judgment, the Magnavox CDB-650 is possibly the "most equal" of them all. We have tested some forty-seven CD players over the past several years. Although a couple of others have matched or even slightly surpassed the Magnavox CDB-650 in a few of their measured characteristics, none has come even close to equaling its overall performance.

It is unlikely that any practical or audible benefit results from a noise level of -125 dB rather than one of -95 dB, or a 20,000-Hz phase shift of zero degrees instead of 90 degrees, or a channel separation greater than 100 dB at 20,000 Hz instead of only 85 dB, and so on. Nevertheless, these and all the other outstanding measurable properties of this machine convey a clear impression of excellence that cannot be disregarded. We also checked the player's various operating modes, including the unique FTS system,


and found that all worked as claimed. This level of performance would be understandable in a premium-priced machine—indeed, it should be expected, and it would be a major reason for the selection of such a product over others. To find it in a player priced just above the *least* expensive models is nothing less than remarkable.

In the midst of so many superlative qualities, it came almost as a relief to find that the CDB-650 was not quite perfect! Our first surprise came when we were listening to it and a cordless telephone a few feet away from the player rang. The CDB-650 immediately shut down, returning to its start-up condition. This behavior could be a handy added feature if the player went into the pause mode, but it was unintentional and became annoying after a while. Apparently something in the player's control or tracking circuits was sensitive to the radio frequencies used in the phone system, and the CDB-650's molded-plastic chassis provided insufficient isolation from them.

The second problem appeared when a couple of our CD's would not load up and run (the display read ERROR). One disc worked correctly after it was removed and replaced in the disc drawer, but the other would not play until we put a second disc on top of it. We suspect that this was a problem with the laser focusing of our test sample (serial number 1) and doubt that it is typical of the product design. Both discs have played properly on every other player with which we have used them.

Finally, curious about the efficacy of the "warming" filter used for the secondary output, we connected the two outputs of the player to two high-level inputs on our preamplifier and did some A/B listening tests. With musical material, we could detect no difference between the two outputs. When we played a pink-noise test signal, however, a slight response loss above 10,000 Hz was clearly audible in the secondary output signal. We can merely repeat the manufacturer's suggestion that you use this feature if you like its effect and ignore it if you don't.

Circle 140 on reader service card



Still don't see it? That's the whole idea behind Koss' revolutionary infrared stereophonic system. The Koss Kordless™ Stereophone. Now, you can enjoy all the benefits of stereophonic listening with no strings attached. And while the cord may be missing, the great Sound of Koss isn't. The Kordless system is so advanced it provides a full 20-20KHz frequency response at less than 1% distortion. Plus enough signal to fill a large room. Yet it's as easy to use as conventional stereophones. Just plug the Kordless transmitter into virtually any receiver or amplifier and turn it

CAN YOU FIND THE STEREOPHONE CORD IN THIS PICTURE?

on. Roam around the room listening to a record. Dance to a CD. Enjoy stereo or mono TV broadcasts and videos in bed. Or whatever else moves you. Sound impressive? You bet it does. And the best way to appreciate this major advance in technology is to visit your nearest Koss Kordless™ Stereophone dealer. One listen, and you'll never sit still for ordinary headphones again.

• Koss Stereophones, 4129 N. Port Washington Rd., Milwaukee, WI 53212. Koss Limited, 4112 S. Service Rd., Burlington, Ontario L7L4X5. Koss-Europe: CH-6855, Stabio-Switzerland.

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CIRCLE NO. 73 ON READER SERVICE CARD



POLK SDA-2A SPEAKER

Julian Hirsch, Hirsch-Houck Laboratories

THE SDA-2A is the latest model in Polk's line of Stereo Dimension Array (SDA) speakers, which were designed to create a more natural stereo sound stage than is possible with conventional forward-facing speaker systems. The problem that Matthew Polk set out to solve with the SDA series is the restriction of apparent sound sources in reproduced music to the region between the two stereo speakers, even when the program's natural distribution is much wider. This restriction occurs because each ear of a listener receives not only the sound from the corresponding speaker (left or right) but also the sound from the opposite speaker, delayed by the time needed for its sound to travel around the listener's head.

The SDA technology involves combining two speaker systems in each cabinet of a mirror-image stereo pair. The inner one (nearest to the center of the room), called the "stereo array," is a normal stereo

speaker. The second system, known as the "dimensional array," is located a few inches to the outside of the stereo array. Each dimensional array is driven by the stereo signal from the *opposite* speaker in the pair, and the frequency, phase, and amplitude characteristics of its output are modified so that when its sound reaches the ear of the listener, it cancels the sound arriving at that ear from the opposite speaker. The result, in the ideal case, is that each ear hears *only* the sound from its corresponding speaker, without the "interaural crosstalk," and consequent spatial distortion, that would otherwise exist.

Eliminating interaural crosstalk effectively removes the physical speakers as apparent sound sources. Sounds meant to originate outside the region between the speakers can be heard in their correct positions, often far outside the space bounded by the left and right speakers. In the original Polk SDA-1, each array was a two-way system, with a passive

low-bass radiator common to both. The SDA-2 was a slightly smaller speaker of basically similar design. Continued experimentation has led to design changes that both improve performance and reduce cost, and the result is the SDA-2A.

The Polk SDA-2A is a floor-standing speaker that measures 39½ inches high, 16 inches wide, and 12 inches deep. The black cloth grille is retained by plastic snaps. Each speaker weighs about 57 pounds. In part, the SDA-2A's improved performance is due to a newly designed 6½-inch mid-bass driver, used in both arrays, that operates from about 150 to 2,000 Hz. Not only does the new driver eliminate imaging problems caused by crossovers in the frequency range of musical fundamentals, but it enhances the stereo dimension effect. In earlier SDA systems, each array had a 1-inch dome tweeter for the frequency range from 2,000 Hz. Polk has since determined that the SDA effect is actually diminished by extending the frequency range of the dimensional array above 2,000 Hz. In the SDA-2A the stereo array uses the speaker's single tweeter, which is located midway between the center lines of the two arrays. The result is said to be improved sound quality and imaging compared with the SDA-2, which, like earlier models, had two tweeters.

The tweeter in the SDA-2A is protected by a fast-acting semiconductor thermal sensor. The speaker's dimensional "array" consists effectively of a single 6½-inch driver. Below 150 Hz, this driver operates together with the stereo array's 6½-inch cone speaker, and their combined low-bass response is further extended by a common 12-inch passive radiator.

Each pair of SDA-2A speakers is joined by a special signal cable. The cable carries the signal from each stereo channel to the dimensional array of the speaker for the other channel. It also forms a common ground connection between the left and right speakers, and the driving amplifier must also have a common ground between its two speaker outputs. (Almost all amplifiers meet this requirement.) The crossover networks used in the SDA-2A are considerably more complex than

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A speaker designed to one standard: Live music.

If you have ever heard music live, you can appreciate what's behind the Bose® 901® Series V Direct/Reflecting® speaker system.

Live music is the complex interaction of direct and reflected sound. Most speakers, however, are not designed with this in mind—which is why they sound more like speakers and less like music.

This was the conclusion reached years ago by a Massachusetts Institute of Technology research team led by Dr. Amar G. Bose. Through extensive research, his team discovered the secret of live music: that it is the precise balance of direct and reflected sound heard during live performances that makes live music sound live. Finally, they designed a product that could put this discovery to work in the living room: the Bose 901 Direct/Reflecting® system.

The Bose 901 Series V speaker: a system of audio innovations.

The introduction of the revolutionary Bose 901 system in 1968 redefined the phrase "high fidelity." For the first time, a speaker was capable of reproducing music with much of the impact, clarity and spaciousness of a live performance. The 901 system's concert hall sound and compact size made it an instant success with both audio critics and audio enthusiasts.

Today's 901 Series V system incorporates some 350 improvements over the original. The speaker's innovative audio technology turns your listening room into an essential part of your stereo system. The 901 system works by reflecting most of its sound, instead of aiming all

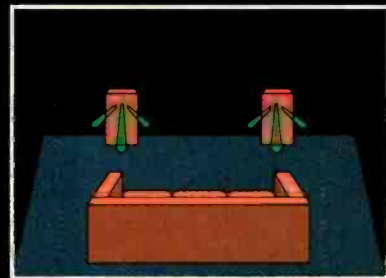
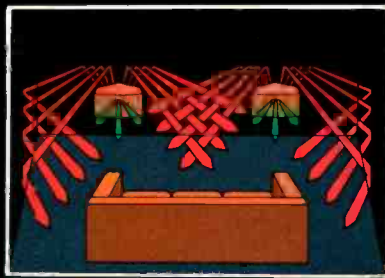
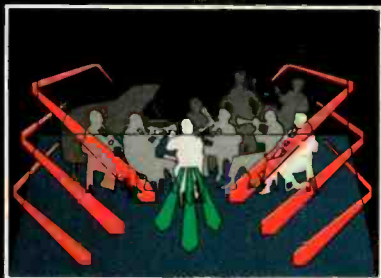


The Bose 901 system's Direct/Reflecting® speaker design turns your listening room into part of your stereo system. You'll hear *full stereo throughout the listening environment*—no matter where you sit or stand.



The 901 system's nine full-range HVC drivers are precisely arranged to re-create live music's natural balance of direct and reflected sound. Each driver is matched and tested by the Bose Syncom® II computer.

The Bose-built HVC driver is made out of some of the strongest advanced composite materials available. The heart of the driver is the Helical Voice Coil, which handles instantaneous peaks of up to 4,000 watts! Multiple HVC drivers give the 901 system unlimited power handling in home applications.



In the concert hall (above left), listeners hear a complex mixture of direct and reflected sounds, arriving from different directions and at different times. Bose Direct/Reflecting® speakers (center) are designed to reproduce music in much the same manner, allowing listeners to hear greater realism and impact. Conventional speakers (above right), on the other hand, reproduce primarily direct sound, causing listeners to miss many of the critical acoustic cues that make live music sound live.

the sound toward you like a conventional speaker. So, anything you listen to over a 901 system picks up a strong sense of concert hall realism, because the system is capable of reproducing the concert hall's natural balance of direct and reflected sound. Best of all, the 901 system's ultra-high efficiency and *unlimited power handling* in home applications make it compatible with almost any stereo system.

The right speaker for the best in audio: digital.

Obviously, a speaker system this exceptional deserves the best possible source of sound available. That's why for a limited time, Bose has a digital bonus when you invest in 901 speakers.

When you buy a Bose 901 system at a participating dealer between October 1, 1986 and January 15, 1987, Bose will give you your choice of eight free compact discs from a CBS® records special collection! And you'll hear your CD's as close to live as possible, because the Bose 901 system has been specifically engineered to take full advantage of their superior sound. Digital Dynamic Range® circuitry and Direct/Reflecting® speaker design allow the 901 system to accurately reproduce live music's impact, clarity and spaciousness.

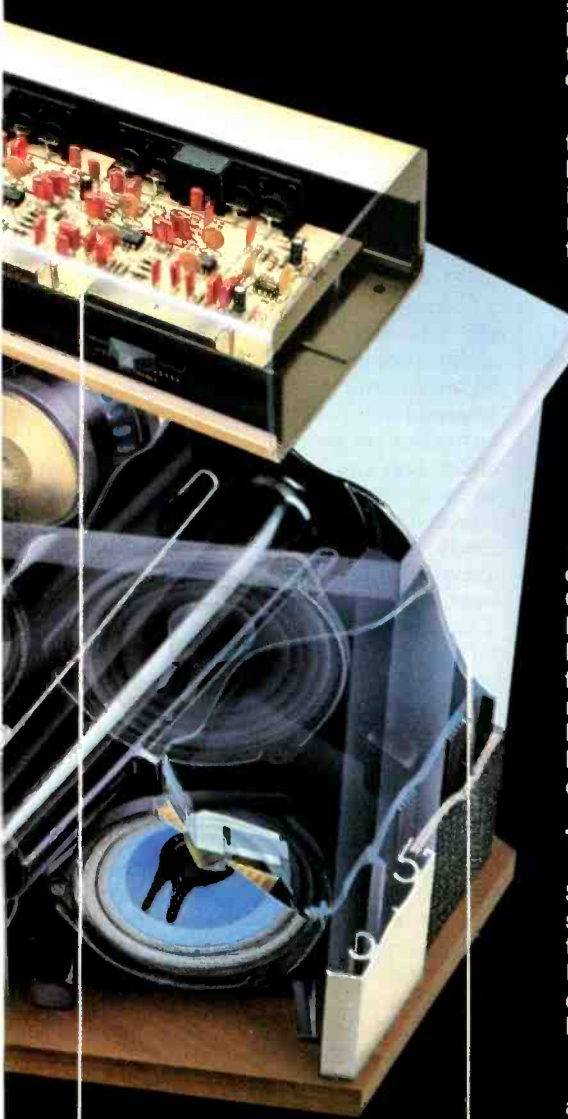
FREE!
Eight Compact Discs
from a CBS® Records special collection when you buy a Bose 901 system!
Details at left.

The right speaker for your entire system

Whether you're listening to digital audio or hi-fi video, the Bose 901 Series V system will let you get the most out of your entire equipment and software investment—because it will let you hear all of the realism that a truly good audio/video system is capable of producing. Audition the Bose 901 Direct/Reflecting® speaker system at your authorized Bose dealer, and judge for yourself. Then take the next step—and invite a legend home.

There is an entire line of Bose speakers that incorporates much of the advanced technology developed for the 901 system. For more information and an all product brochure, write Bose Corporation, Dept. SR, 10 Speen Street, Framingham, MA 01701.

When you write for information, be sure to request a copy of Dr. Amar Bose's *Sound Recording and Reproduction*. This paper describes the research effort behind the original Bose 901 system.



The Acoustic Matrix™ enclosure helps the 901 system control sound by precisely controlling air. Made up of 14 separate acoustic regions, it isolates the drivers and regulates internal air flow, resulting in increased bass and lower distortion.

The Bose 901 active equalizer uses low-distortion electronics to control the system's total frequency response, allowing a compact system to produce full-frequency sound. Digital Dynamic Range® circuitry makes the entire system ideal for use with the best sources available.

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BOSE
Better sound through research.

those of a conventional two-way system since they also control the characteristics of the inputs to the dimensional arrays.

The only special installation requirements for the Polk SDA-2A is that the two speakers must be placed the same distance from the wall behind them and that both must face directly forward. It is recommended that they be 4 to 8 feet apart for the best results. The cabinet is available in walnut or rosewood finish. Price: \$998 per pair. Polk Audio, Dept. SR, 5601 Metro Dr., Baltimore, MD 21215.

Lab Tests

The SDA-2A's room response, averaged for both speakers from a single microphone position, was very much like that of the original SDA-1. The interconnecting cable was in place for this measurement, but only one speaker was driven at a time. The response was impressively flat and smooth, varying only ± 2 dB from 150 to 18,000 Hz except for an additional 1.5-dB rise at 12,000 Hz (possibly caused by a tweeter resonance). The close-miked bass response was exceptionally well matched to the upper part of the spectrum. Neglecting the tweeter peak, the overall response was flat within ± 3 dB from 28 to 18,000 Hz, which ranks with the best responses we have measured from a speaker.

Quasi-anechoic FFT response measurements made with our IQS analyzer confirmed the essential characteristics of the room-response curves. The tweeter dispersion was very good, with no significant divergence between response curves measured on-axis and 45 degrees off-axis until the frequency exceeded 12,000 Hz. The phase linearity of the tweeter in its operating range (above 2,000 Hz) was excellent, with a group-delay variation of ± 0.15 millisecond. In the operating range of the dimensional array, the phase shifts designed into the SDA-2A system caused a group-delay shift of about 0.3 millisecond in the 1,000- to 2,000-Hz range and a larger shift at lower frequencies.

We measured the impedance on one speaker with the interconnect cable installed but the signal terminals of the other speaker shorted (which results in the lowest possible

impedance). The minimum impedance, about 3.5 ohms, was reached at 100 to 130 Hz, and maximum figures of 12 to 15 ohms occurred at 20, 55, and 1,000 Hz. Over most of the middle- and high-frequency range the impedance was about 10 ohms. With an input of 2.83 volts of pink noise, the SDA-2A produced a sound-pressure level (SPL) of 88 dB at a distance of 1 meter.

Low-frequency distortion was measured with a constant input of 3.56 volts, equivalent to a 90-dB SPL in the midrange. The distortion readings were not particularly low (3 to 5 percent) in the 70- to 100-Hz range, but they dropped considerably below 55 Hz, the range where the passive radiator's output was dominant. The distortion was in the range of 1 to 2 percent from 32 to 53 Hz, increasing sharply to 7 percent at 30 Hz.

Our peak-power tests of the Polk drivers confirmed that they can handle any power that is likely to be supplied in a home system. At 100 Hz the woofer output began to distort gradually, without the usual raspy sounds of a cone suspension reaching its limits, at 357 watts into 3.5 ohms. At 1,000 Hz the amplifier clipped at 510 watts into the driver's 13-ohm load. At 10,000 Hz the amplifier clipped at 1,000 watts into the dome tweeter's 9.5-ohm impedance with no signs of distress from the driver. We never activated the tweeter's protection device despite some rather loud playing.

Comments

Conventional measurements cannot explain or evaluate the spatial properties of a system such as the Polk SDA-2A. All they can do is show whether or not it is a basically good speaker design. In this case our measurements left no doubt that the SDA-2A is a superb speaker regardless of its spatial characteristics. It cannot, however, be judged fairly without bringing those characteristics into consideration.

Fortunately, it took only a brief exposure to the sound of the Polk SDA-2A to recognize its unique qualities. In our opinion, it is easily a match for any of the earlier SDA speakers and may well be even better than some of the others, though without a direct comparison (very

difficult to make with speakers like these) it would be hard to be certain of that.

When we listened to recordings having strong left-right separation the sound wrapped around us through an angle of at least 90 degrees, even though the speakers formed an angle of perhaps only 40 to 50 degrees with the listening position. With most stereo programs the speakers effectively disappeared as sound sources, and the sound stage was seamless across the width of the room, even with relatively close speaker spacing.

Of course, since the SDA effect is a function of the difference between the left and right channels, it is always dependent on the program. Mono programs came from midway between the speakers exactly as with any other speaker system. The SDA effect was most pronounced when we were listening from a position equidistant from the two speakers. Even when we were considerably away from this ideal position, however, the effect rarely disappeared. These speakers *always* sounded different from conventional speakers—and, in our view, better—as a result of their SDA design.

When we compared our test data on the SDA-2A with that on the original SDA-1, which is nearly twice its price, it was surprising to see the similarities between them. They had nearly identical response curves, except for the superior low bass of the SDA-1. Even their bass-distortion curves were similar, and the most obvious difference between them was the higher sensitivity of the SDA-1 (95 dB instead of 88 dB for the SDA-2A). When you consider that the SDA-2A is a great deal less expensive than the SDA-2 on which it was based, as well as having improved SDA performance, you begin to appreciate the "less is more" philosophy!

Of the many speakers we have tested in recent years, the best values—and some of the best speakers—are in the \$500-per-speaker range. The Polk SDA-2A is right up there at the top of the class in every way. It has the ability to make your previous favorite speaker sound almost second-rate. Listen to it at your own risk!

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inative engineering and precision manufacturing, not complex designs and exotic, expensive materials. Its efficiency, power capacity, wide range response and just plain beautiful sound will make even the most die-hard technophile forget the graphs and specs and sit back to revel in the sound. And, with a suggested retail price of \$199.95, forget about what it cost to get it.

There is an EPI Time/Energy speaker for everyone regardless of their listening habits, their electronics or their budget. Each one gives dedicated music lovers the kind of performance, quality and reliability that will keep them listening for years to come. With the Time/Energy speakers you can literally hear today what you'll listen to in the future.

The EPI T/E 280 Series II. One of eight Time/Energy Series II speakers and Time/Energy Monitors offering EPI performance and value with suggested retail prices of from \$99.95 to \$299.95. Epicure Products, Inc., Newburyport, MA 01950, 800-225-7932, in Mass. 800-892-0565.

EPI[®]





NAKAMICHI SR-3A AM/FM RECEIVER

Julian Hirsch, Hirsch-Houck Laboratories

THE Nakamichi SR-3A is one of the first receivers licensed to use the Stasis audio-amplifier topology developed by Threshold Corp. The Stasis circuit was designed to provide completely stable, low-distortion output without using overall negative feedback. It does this by combining a very low-distortion, low-output impedance amplifier with a high-impedance, high-current "bootstrap" amplifier in a single output stage. The high-current amplifier supplies the major portion of the total power output, and the low-current amplifier (which effectively determines the total amplifier distortion) merely supplies the small signal current needed to compensate for nonlinearities in the other amplifier's output.

The Nakamichi SR-3A is rated to deliver up to 45 watts per channel into 8-ohm loads from 20 to 20,000

Hz with no more than 0.1 percent distortion. Its rated dynamic headroom is 1.5 dB, and it can deliver, according to the manufacturer, a peak current output of 18 amperes per channel. Although many of its operating features are similar to those of other good receivers, it is built to the traditional Nakamichi standards of quality and attention to detail. The multiple-winding power transformer drives separate rectifiers and regulators for the audio, tuner, display, and video circuitry. Considerable effort was devoted to eliminating signal currents in ground circuits to prevent instability or crosstalk resulting from the sharing of a common ground path by more than one part of the receiver. The SR-3A is designed to switch video sources as well as conventional audio tape recorders, turntables, and compact disc players. A video output is also provided to drive a

video monitor from the selected video source.

The bass and treble tone-control circuits can be bypassed by pressing a small button on the panel. Another button selects preamplifier inputs for either a moving-coil (MC) or a moving-magnet (MM) phono cartridge. A separate switch on the rear apron of the receiver increases the MC gain by an additional 8 dB for use with low-output cartridges. A subsonic filter (usable only with a

The Nakamichi SR-3A is designed to switch video sources as well as audio tape recorders, turntables, and compact disc players. The receiver is built to the traditional Nakamichi standards of quality and attention to detail.

phono source) provides a 12-dB-per-octave cutoff below 20 Hz. The TAPE/VCR MONITOR knob selects for playback either the regular program

Remote control sounds great.

If the components sound great.





Lots of companies let you run a component hi-fi system from across the room. Some even let you do it with only one remote controller. Sound terrific? That depends... on how the components sound.

At Denon, we believe that superior sound is the only thing that makes high fidelity worth the money. We call this philosophy Design Integrity. And it's evident in every new Denon remote component — from the top of the line you see here* to our most affordable remote models.

The DCD-1500 Compact Disc Player (shown) has already been declared "Reference Class" by Germany's *Audio* and *HiFi Vision* magazines. In the U.S., *Digital Audio* proclaimed, "The Denon engineers who created the DCD-1500 should be honored in public."

Denon's expertise in making pro digital recorders and blank tape is reflected in the new DRM-30HX Cassette Deck. You can see it in the three-head design. In the super-smooth three-motor transport. And in the choice of Dolby[®] B, C, and HX Pro.

Thanks to Design Integrity, the DRA-95VR Receiver uses the same Pure Current Power Supply, Non-NFB circuitry, and MC cartridge inputs as Denon integrated amps. What's more, every Denon receiver provides switching facilities for a VCR, a video disk player and a video monitor.

So before you buy components whose most impressive feature is a remote control, get yourself to a Denon dealer. And listen to the remote control whose most impressive feature is the components it controls.

DENON
DESIGN INTEGRITY

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FEATURES

- Stasis power-amplifier section
- Digital-synthesis AM/FM tuner with auto-scan or single-step manual tuning
- Ten station presets (five keys assignable to two frequencies each)
- Loudness compensation
- Subsonic filter with 12-dB-per-octave slope
- Bass and treble tone controls with defeat button
- Selectable inputs for CD, tuner, phono, audio tape decks, video sources (sound only)
- Front-panel selection of MM or MC cartridge input
- Dubbing between audio tape decks or VCR's
- Connections and switching for two pairs of speakers
- Detachable pivoted AM loop antenna
- Two switched AC outlets

LABORATORY MEASUREMENTS

- FM Tuner Section**
- Usable sensitivity (mono):** 13.8 dBf (2.7 μ V)
- 50-dB quieting sensitivity:** mono, 12.5 dBf (2.3 μ V); stereo, 35 dBf (30 μ V)
- Signal-to-noise ratio at 65 dBf:** mono, 84.5 dB; stereo, 77.3 dB
- Harmonic distortion (THD + noise) at 65 dBf:** mono, 0.11%; stereo, 0.06%
- Capture ratio at 65 dBf:** 1.7 dB
- AM rejection at 65 dBf:** 67 dB
- Selectivity:** alternate-channel, 46.5 dB; adjacent-channel, 3.8 dB
- Stereo threshold:** 26 to 31 dBf (11 to 19.5 μ V)
- 19-kHz pilot-carrier leakage:** -74 dB
- Hum:** -75 dB
- Stereo channel separation at 100, 1,000, and 10,000 Hz:** 44, 46, and 44.5 dB
- Frequency response:** 30 to 15,000 Hz +0.2, -0.3 dB
- AM Tuner Section**
- Frequency response:** -6 dB at 29 and 3,200 Hz
- Audio Amplifier**
- 1,000-Hz output power at clipping:** 54 watts into 8 ohms; 62.4 watts into 4 ohms; 72 watts into 2 ohms
- Clipping headroom relative to rated output:** 0.8 dB (8 ohms)
- Dynamic power output:** 72 watts into 8 ohms, 98 watts into 4 ohms, 105 watts into 2 ohms
- Dynamic headroom:** 2.05 dB (8 ohms)
- Harmonic distortion (THD + noise) at 1,000 Hz into 8 ohms:** 1 watt, 0.1%; 10 watts, 0.08%; 45 watts; 0.014%
- Maximum distortion from 20 to 20,000 Hz into 8 ohms:** 0.095% at 4.5 watts (100 Hz)
- Slew factor:** greater than 25
- Sensitivity (1-watt output into 8 ohms):** CD/auxiliary, 29 mV; phono MM, 0.315 mV; phono MC (high), 0.02 mV; phono MC (low), 0.008 mV
- Phono-input overload:** 105 to 148 mV
- A-weighted noise (referred to a 1-watt output):** CD/aux, -85.5 dB; phono MM, -81.4 dB; phono MC (high), -75 dB
- Phono-input impedance:** 54,000 ohms at 1,000 Hz
- RIAA equalization error:** 0.03 dB overall from 20 to 20,000 Hz
- Tone-control range:** +6, -5 dB at 100 Hz; +5.5, -4.5 dB at 10,000 Hz

source or the output of either tape deck or VCR. It also has positions for audio dubbing in either direction between the audio or the video recorders. The front panel also features controls for volume, balance, and loudness, a headphone jack, and two speaker-output selectors.

The display window, though simple and tasteful in design, conveys all the necessary information, including tuner band and frequency, tuning mode (auto scan or manual), and relative signal strength. Flat keys below the window select the

AM or FM band, select the tuning mode, and tune up or down in frequency. The five station-preset keys can be switched to store a total of ten frequencies. Each key recalls the appropriate band as well as the channel frequency. A light on each key indicates the selected preset channel.

The rear apron of the SR-3A contains all of the signal input and output jacks, a 75-ohm Type F antenna jack, and a mounting for the detachable, pivoted AM loop antenna. A 300- to 75-ohm coupling transform-

er is supplied for use with antennas having 300-ohm feeders or as a connecting plug for a 75-ohm coaxial cable. The speaker outputs use insulated binding posts, and there are two AC convenience outlets, both of them switched.

The Nakamichi SR-3A, finished in black with gold markings, measures 17 inches wide, 14½ inches deep, and 4 inches high. It weighs 18¾ pounds. Price: \$599. Nakamichi, Dept. SR, 19701 S. Vermont Ave., Torrance, CA 90502.

Lab Tests

During the 1-hour preconditioning period at 15 watts output (one-third rated power), the top of the receiver became very hot over the heat sinks, though it was never more than slightly warm during actual use. The 1,000-Hz output power at clipping was 54 watts per chan-

The SR-3A's tone controls had superb characteristics, the phono equalization and subsonic filter were nearly ideal, and the FM noise and distortion were excellent.

nel into 8 ohms, 62.4 watts into 4 ohms, and 72 watts into 2 ohms. With 8-ohm loads, the 1,000-Hz distortion was a nearly constant 0.1 to 0.08 percent from 0.1 to 10 watts, decreasing to a minimum of 0.0135 percent at 50 watts. The shape of the distortion curves with 4- and 2-ohm loads was quite similar, but the readings were somewhat higher—typically 0.15 to 0.2 percent with 4 ohms and 0.4 to 0.5 percent with 2 ohms.

The distortion was equally unaffected by frequency. At rated power into 8-ohm loads it was about 0.015 percent from 20 to 5,000 Hz, rising to 0.047 percent at 20,000 Hz. At half-power and one-tenth power the distortion was similarly constant over the entire audio range, averaging about 0.05 percent at 22.5 watts and 0.09 percent at 4.5 watts. The slew factor exceeded 25, and the reactive-load factor was 0.59 dB at 63 Hz. The 10,000-Hz square-wave response with a reactive simulated

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speaker load was one of the best we have seen from any amplifier, showing virtually no signs of overshoot or ringing.

The high-level (CD) input's sensitivity for a 1-watt output was 29 millivolts (mV), and the A-weighted noise level was -85.5 dB. The phono input's sensitivity was 0.315 mV for the MM input and 0.02 mV for the MC input, with respective noise levels of -81.4 and -75 dB. The MM phono input overloaded at inputs between 100 and 148 mV over the 20- to 20,000-Hz range. The RIAA phono equalization was accurate within 0.03 dB overall from 20 to 20,000 Hz. The subsonic filter introduced a 1.5-dB rise in the 40- to 60-Hz range, decreasing to -5 dB at 20 Hz (with the rated 12-dB-per-octave slope below that frequency).

The tone controls had very good characteristics, affecting only the frequencies below about 200 Hz and above 5,000 Hz. The loudness compensation boosted both low and high frequencies at reduced volume settings, but to a moderate degree, and did not cause an unduly heavy sound. Its maximum bass boost of 10 dB took place below 50 Hz, and the treble boost was only 6 dB at 20,000 Hz.

The FM tuner section had an unusually flat frequency response,

within $+0.2$, -0.3 dB from 30 to 15,000 Hz. The stereo channel separation was also very uniform, 44 to 46 dB from 100 to 10,000 Hz, decreasing to 37.5 dB at 30 Hz and 40 dB at 15,000 Hz. The tuner's sensitivity was good, and its distortion and noise measurements were excellent. The muting and stereo thresholds were rather high, in the range of 30 dBf (or $17.4 \mu\text{V}$), with the result that stereo transmissions could be received only if they were strong enough to provide listenable quality.

Comments

Our measurements of the Nakamichi SR-3A show it to be an above-average receiver in most respects. Only its 46.5-dB alternate-channel selectivity was slightly disappointing (in view of its general excellence), though even performance equaling the manufacturer's rating of 55 dB would not be considered especially noteworthy in a receiver of this price. With that minor exception, we found many uncommon qualities in the SR-3A. The tone controls had superb characteristics, the phono equalization and the subsonic filter were as nearly ideal as one can find, and the FM tuner's noise and distortion levels were excellent.

The audio distortion of the Stasis

amplifier section followed an unusual pattern, with nearly constant readings over wide changes of power and frequency and only the typical (and expected) increase when it was driving low-impedance loads.

The ultimate test of any audio component is its actual listening performance. Here the Nakamichi SR-3A really impressed us. For instance, although the measured sensitivity of the FM tuner section was good, it was not especially outstanding. In real-world use, however, connected to the same antennas we use with other tuners and receivers, it delivered a dead-quiet background, and there was a striking absence of the usual aberrations of FM reception (such as multipath distortions). In an A/B comparison with a system of separate components, each of which costs about as much as the Nakamichi SR-3A, it more than held its own.

Nakamichi claims that the rather modestly powered SR-3A can play as loud as much more powerful conventional amplifiers. In our listening tests it came remarkably close to doing just that—it was difficult at times to accept that we were hearing a 45-watt amplifier! Since its headroom and power-envelope measurements, though good, were not particularly unusual, the most probable explanation lay in the ability of the Stasis amplifier to operate smoothly up to its clipping point into real speaker loads, without the various dynamic distortions that are typical of most amplifiers. We were unable to verify this quality with previous Stasis amplifiers (such as Nakamichi's own PA-7), probably because their 200 watts and more of available power produced volume levels far higher than could be tolerated during prolonged listening. Because it is very easy to drain the reserves of a 45- or 55-watt amplifier, its true performance at maximum output can be assessed more readily.

In addition to its fine performance, the Nakamichi SR-3A appealed to us because of its tastefully understated styling and the good feel of its controls. These are characteristics that Nakamichi has always strived to build into its products, and they certainly contribute to the pleasure of using this one.

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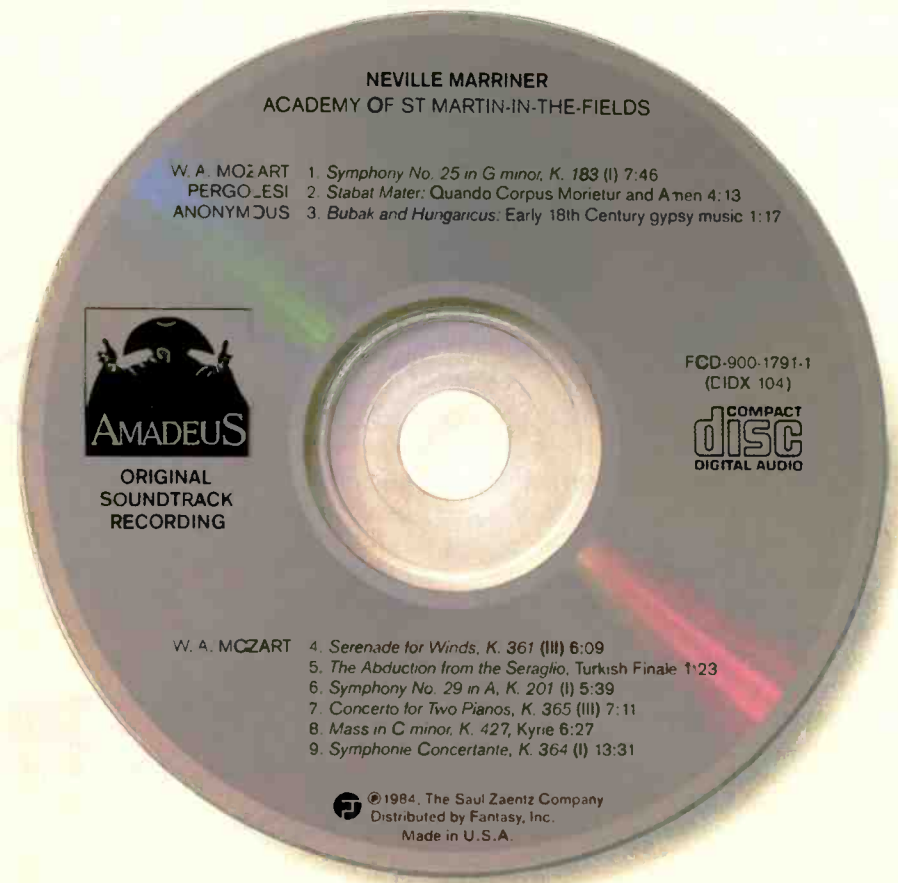
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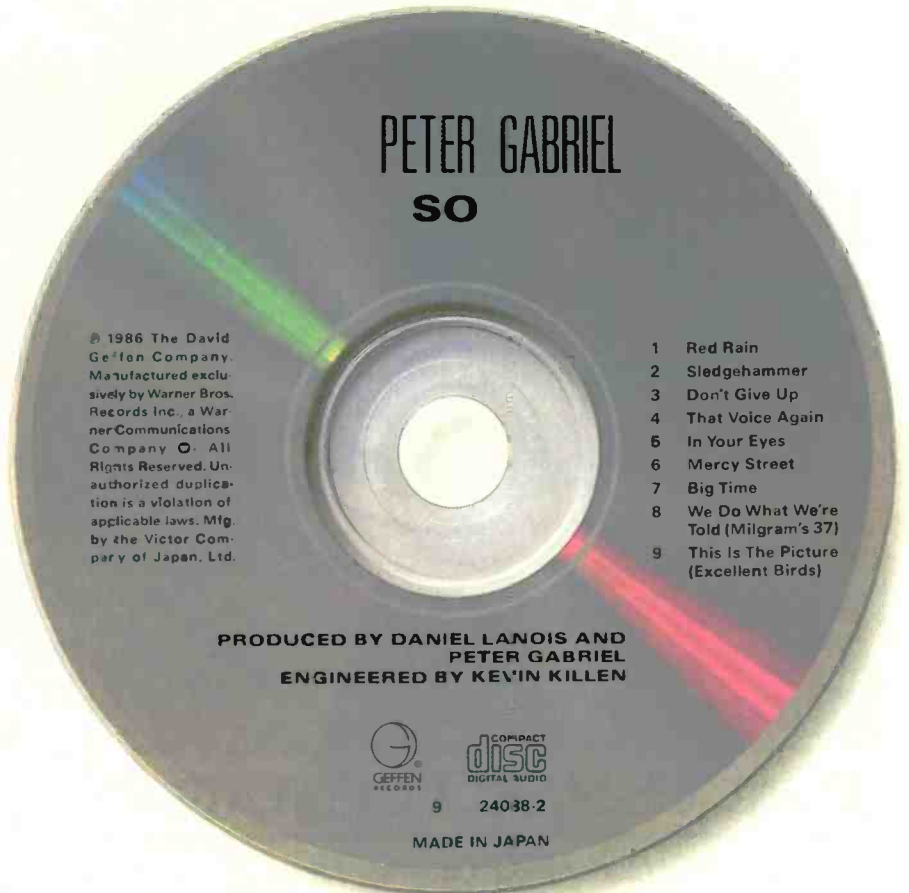
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DUAL CS 5000 TURNTABLE

Julian Hirsch, Hirsch-Houck Laboratories

THE three-speed Dual CS 5000 is a semi-automatic turntable that starts rotating when the arm is moved from its rest and stops when the arm is returned. At the end of a record's side (which is sensed optically), the arm lifts and returns to its rest and the motor shuts off. The platter, which weighs 3¾ pounds including its thick rubber mat, is belt-driven from a tiny, flat, disc-shaped motor. The motor's speed is electronically controlled by a quartz-crystal reference oscillator and a microprocessor. In addition, a second control loop measures the platter's speed with an optical sensor and corrects the motor speed as required to maintain the correct playing speed. Unlike almost all other currently available record players, the Dual CS 5000 operates at 78 rpm as well as 33⅓ and 45 rpm.

The tonearm of the CS 5000 is designed to minimize many of the recognized weaknesses of typical pivoted tonearms. It is supported by gimbal pivots for both axes of motion and operates at all times in a

fully balanced state (the downward tracking force is supplied by a coiled spring). Dual points out that the arm-support system eliminates any need for critical leveling of the turntable, which can in theory be operated at almost any angle to the horizontal.

Another potential problem, warp wow, is a common result of playing a warped record with a tonearm whose vertical pivot is located above the record's plane. The combination causes a periodic fore-to-aft shift of the stylus as the arm travels over the warp and superimposes a frequency modulation (wow) on the program. The Dual CS 5000's tonearm has its vertical pivot in the plane of the record, which reduces warp wow to its lowest possible level.

The slim, tubular-aluminum tonearm has a removeable headshell featuring Dual's adjustable vertical tracking angle (VTA). The cartridge can be tilted by a knob on top of the shell, varying the VTA over a ±5-degree range. A critical listener can do this by ear, and Dual

also recommends VTA settings for a number of popular cartridges. The tracking-force and antiskating controls are on the tonearm's pivot structure, near the arm rest and cueing-lift lever.

Most turntables, including the CS 5000, have platters that are designed to concentrate their mass around the outer edge, where it contributes the most to the inertia of the system. These platters resemble a shallow bell, and they usually ring like one when struck or otherwise excited mechanically, a characteristic that can color or muddy the reproduced sound. The platter of the CS 5000 features a unique damping system to eliminate such resonance. Inside the outer rim of the cast aluminum-alloy platter is a heavy metal ring covered by a plastic hose that acoustically couples it to the platter and damps the bell resonances.

The turntable system of the CS 5000, consisting of the platter, the tonearm, and their common supporting structure, is suspended from the wood base on four adjustable, shock-absorbing feet. The spring in each shock absorber can be compressed by turning a knurled ring to vary the degree of damping and the softness (or stiffness) of the suspension. The manual gives instructions for adjusting the shock absorbers to meet specific operating conditions.

The CS 5000 has a walnut-veneered base and a hinged, clear-plastic dust cover. The power switch, a flat button, is at the left front of the motorboard. On the right side are the three speed-selector buttons, with lights that indicate the operating speed. The Dual CS 5000 measures 17⅞ inches wide, 15 inches deep, and 5⅞ inches high. It weighs 16¾ pounds. Price: \$400. Dual, Dept. SR, 122 Dupont St., Plainview, NY 11803.

Lab Tests

We installed a high-quality magnetic cartridge, designed to track at 1 gram, in the headshell of the CS 5000. With the aid of an overhang gauge that Dual supplies (it must be cut out of the last page of the turntable's instruction manual), the process was no more difficult than usual. Initial balancing was very easy because of the threaded adjust-



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ment knob on the counterweight and the obviously very low friction of the arm bearings.

The tracking-force calibrations were extremely accurate, coinciding exactly with the readings of a good separate tracking-force gauge over the range of 1 to 3 grams. The arm's tracking error was less than 0.4 degree per inch over almost the entire record surface. A computer analysis of the arm's geometry, based on Dual's specifications and some of our own measurements, showed that zero tracking error occurred at radii of 2.71 and 4.37 inches. The CS 5000's tonearm, therefore, has the essential properties of an ideal pivoted arm of its dimensions.

The arm and the rather compliant cartridge resonated at 7 to 8 Hz, a somewhat low frequency. The 13.5-gram effective mass of the tonearm, however, places it in the medium-mass category, and it should be compatible with most cartridges. The signal cable's capacitance to ground in each channel was 150 picofarads, suitable for most moving-magnet cartridges as well as all moving-coil cartridges. The anti-skating compensation was approximately correct at the 1-gram setting, although there was some improvement in tracking when it was set at 1.5 grams.

The Dual CS 5000's tonearm has its vertical pivot in the plane of the record, reducing warp wow, a common problem with warped records, to its lowest possible level.

The turntable's flutter measured ± 0.1 percent CCIR-weighted peak and 0.06 percent JIS-weighted rms. The ARLL-weighted rumble was -59 dB, and with DIN-B weighting it was -68 dB. The three operating speeds (which are not user-adjustable, by the way) were very close to their nominal values, with errors of -0.07 percent at $33\frac{1}{3}$ rpm, -0.27 percent at 45 rpm, and $+0.28$ percent at 78 rpm.

We were unable to measure the

isolation effectiveness of the turntable's mounting feet because of the unusual control operation of the CS 5000. The stylus cannot be lowered onto a record until the turntable has reached its correct speed. Since we normally place the stylus into the groove of a stationary record when measuring isolation, we looked for ways to defeat this feature. Removing the belt from the motor pulley gave us a stationary platter, and (surprisingly) the pickup descended to the disc as though it were turning at $33\frac{1}{3}$ rpm. After a few seconds, however, the pickup lifted and our measurements were interrupted. To complicate matters further, the pickup continued to descend and rise alternately at intervals of several seconds! Possibly the platter-speed sensor was sending confusing messages to the motor servo. Whatever the reason, we could not make the measurement.

Comments

Although announcements of new turntables are becoming infrequent, Dual presents a convincing rationale for the development of the new CS 5000. While acknowledging the impressive growth of the compact disc medium in recent years, Dual points out that the many millions of existing analog records, along with the many LP's and 45's that are sure to be issued in the years to come, will require playback support for the foreseeable future. With that in mind, the company's engineers have produced what is almost certainly the finest record player to bear the Dual name—and quite possibly one of the most advanced turntables ever made to sell at its price level.

Except for the sometimes frustrating enforced wait for the platter speed to stabilize before we could play a record, the operation of the Dual CS 5000 was totally straightforward. We tested the spring-damping adjustment range of the mounting feet subjectively by jarring the turntable and observing the rate and duration of the platter's oscillation. At one extreme setting, the system had a highly "bouncy" action that would be ideal with an installation on rigid, stable supports, isolating it from any vibration conducted through its feet. At

the other limit, it had a stiff, "locked-up" response that would be much more suitable for operation on a table or shelf that's subject to jarring, though it would probably be

The CS 5000 is almost certainly the finest record player to bear the Dual name—and quite possibly one of the most advanced turntables ever made to sell at its price level.

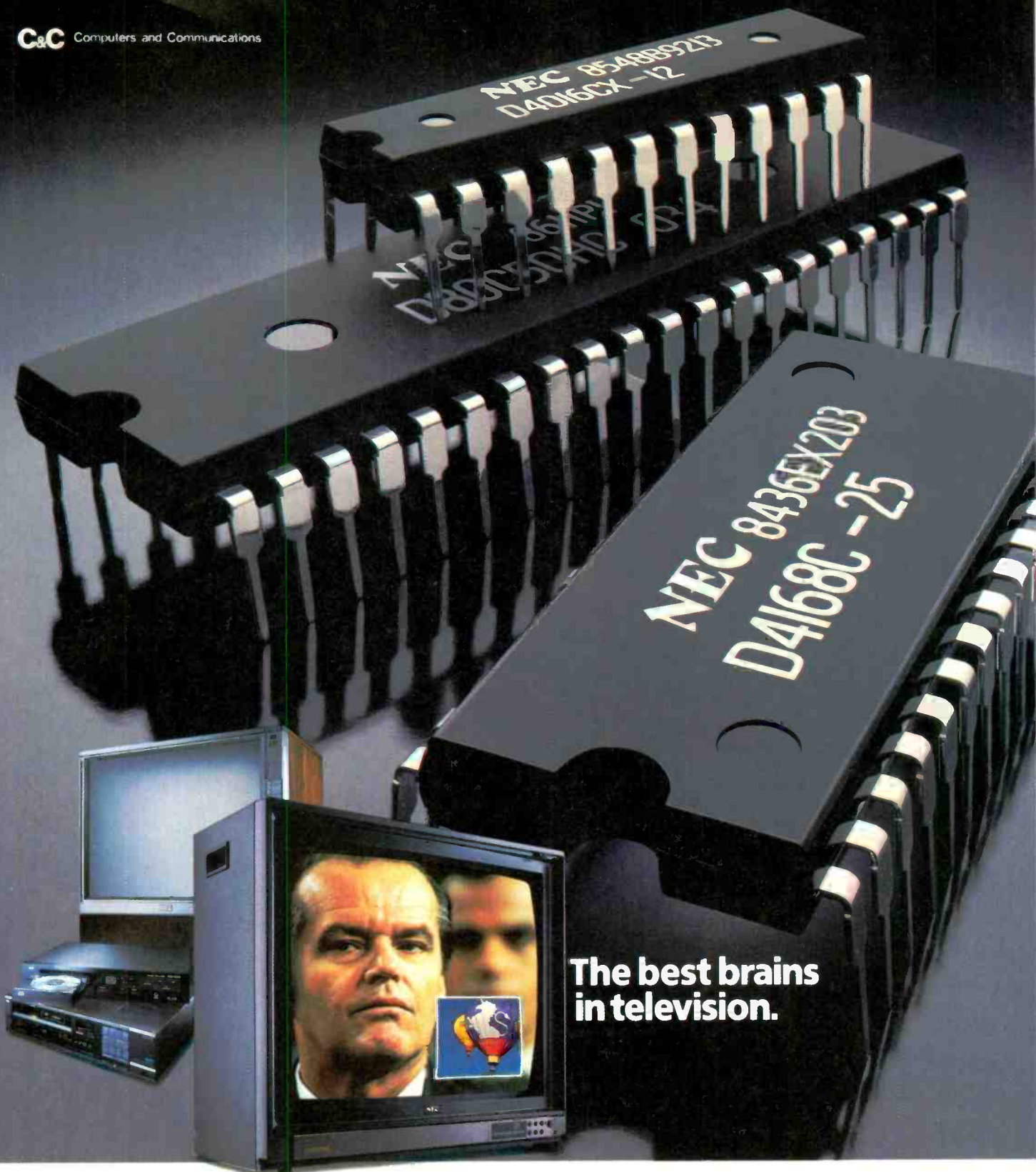
more sensitive to conducted vibration. Overall, the adjustable damping system seemed to work just as Dual's literature indicated it would.

On the other hand, while the manual refers to levers on each of the mounting feet that could adjust the damping over its full range with a limited rotation, there was no sign of these levers on our test sample. The adjustment required many turns of the knurled knobs, and there were no reference calibration points to use as a guide for matching the settings of the four feet. We estimate that a full setup adjustment of the damping system would be at least as laborious as mounting a phono cartridge or setting its vertical tracking angle by listening to the playback of a record. In other words, it is not a task to be undertaken lightly.

The CS 5000 did a very good job of playing warped records, and its tonearm design appeared to reduce warp wow to negligible (or at least acceptable) levels. Incidentally, while it would not play at extreme angles, such as resting on one edge, it was not bothered by tilts of at least 30 or 40 degrees.

The CS 5000 is a handsomely styled, innovative, and reasonably priced record player that represents a distinct departure from previous Dual turntables in both its design and its apparent intended market. Phonophiles, especially those with large collections of 78-rpm discs, should find it an answer to their prayers.

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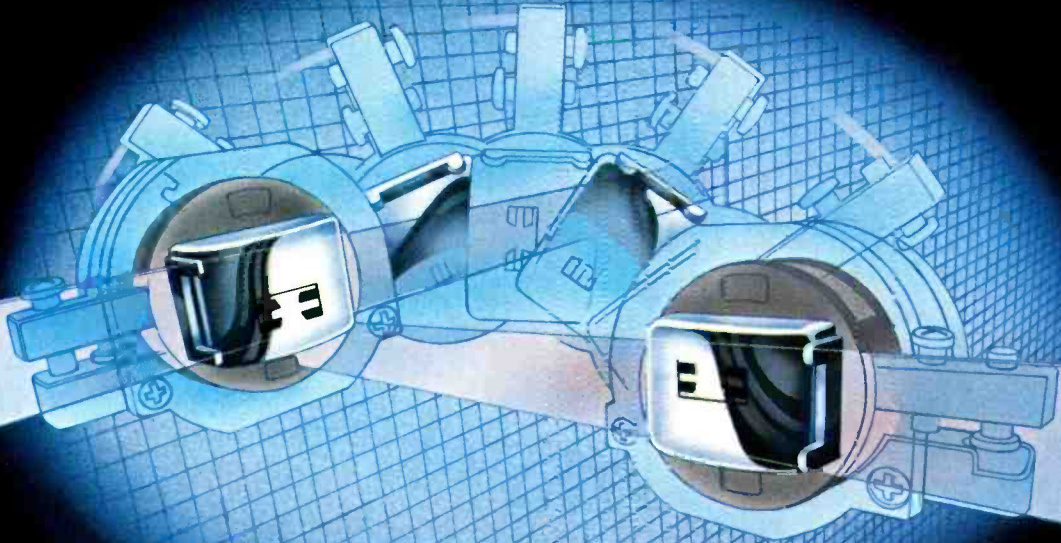
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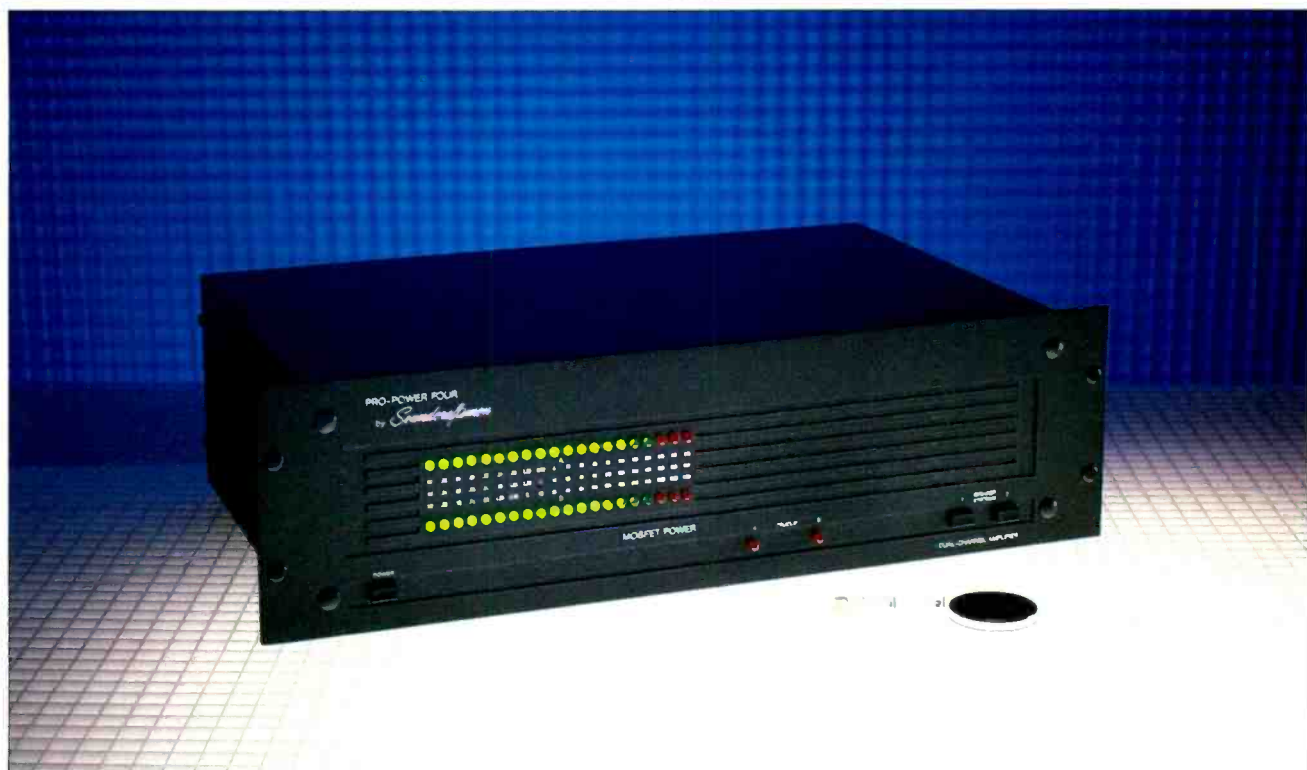


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ROBERT LORENZ

SOUNDCRAFTSMEN PRO-POWER FOUR AMPLIFIER

Julian Hirsch, Hirsch-Houck Laboratories

SOUNDCRAFTSMEN'S Pro-Power Four power amplifier was designed to meet the extended dynamic-range requirements of compact disc players. Its ability to deliver high short-term current outputs (over 50 amperes, according to the manufacturer) into low-impedance speaker loads makes it compatible with many "difficult" speakers (such as the Acoustat or Apogee) that cannot be driven properly by most conventional amplifiers. The high-frequency response of its fully complementary MOSFET output stages extends to beyond 10 MHz. The amplifier uses no current-limiting circuits.

The Pro-Power Four also features the proprietary Soundcraftsmen Phase-Control-Regulation (PCR) power supply first used in the company's PCR800 amplifier. When an amplifier is called upon to deliver a high audio power output, the large

current drain normally causes the power-supply voltage to drop, reducing the maximum available power. The PCR error-sensing circuits vary the conduction time of the power supply's silicon-controlled rectifiers, maintaining a nearly constant voltage under widely varying load conditions. This regulating action also minimizes the effects of reduced power-line voltage, which can seriously limit the maximum power output of an amplifier using an unregulated power supply.

The Pro-Power Four has differential input stages, for low noise and distortion, and high-gain, fast-slewing Class A amplifying stages. Instead of using large, heavy, and costly external heat-sink fins to dissipate the heat from the output transistors at high power levels, the Pro-Power Four uses a two-speed fan to keep them at a safe temperature.

During normal operation the fan turns slowly and quietly, drawing outside air into the left rear of the amplifier, passing it over the internal heat sinks, and exhausting the warm air at the right rear. An internal temperature sensor switches the fan to its high-speed mode when necessary.

The Soundcraftsmen Pro-Power Four is rated to deliver 205 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.05 percent total harmonic distortion. It is also rated for 300 watts into 4 ohms and 450 watts into 2 ohms. The black-finished amplifier measures 19 inches wide, 11¾ inches deep, and 5¼ inches high, and it weighs about 27 pounds.

The front panel contains two rows of LED instantaneous-power indicators, twenty for each channel. The LED's, which are green up to 200 watts and red from 200 to 400 watts (into 8 ohms), are spaced at logarithmic intervals, with one-third of them assigned to power outputs under 1 watt. Calibrations are also provided for 4- and 2-ohm loads. Each channel also has a red Truclip indicator that lights only when the amplifier is driven into nonlinearity. In addition to the power switch, the

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A word of caution, however, knowing about Technics CD players could lead to another obsession: wanting to own all of them.



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- Truclip instantaneous clipping indicators
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LABORATORY MEASUREMENTS

1,000-Hz continuous output power at clipping: 236 watts into 8 ohms, 324 watts into 4 ohms, 406 watts into 2 ohms

Clipping headroom (relative to rated output): 0.61 dB (8 ohms)

Dynamic power output: 225 watts into 8 ohms, 406 watts into 4 ohms, 500 watts into 2 ohms

Dynamic headroom: 0.47 dB (8 ohms)

Harmonic distortion (1,000 Hz, 8 ohms): 1 watt, 0.013%; 200 watts, 0.013%

Sensitivity (for a 1-watt output): 72 millivolts

A-weighted noise (referred to a 1-watt output): -84 dB

front panel has two pushbuttons that connect the two sets of speaker output binding posts to the amplifier outputs. Price: \$699. Soundcraftsmen, Dept. SR, 2200 S. Ritchey St., Santa Ana, CA 92705.

Lab Tests

During the standard 1-hour preconditioning period at one-third rated power, the amplifier's fan switched to its high speed in about a minute, and it cycled between high and low speeds for most of the following tests. Although the top of the case became moderately warm under this harsh treatment, it was never uncomfortable to the touch.

The amplifier delivered 236 watts per channel into 8-ohm loads, 324 watts into 4 ohms, and 406 watts into 2 ohms. We found that these maximum power readings (especially that into 2 ohms) were difficult to repeat because of their apparent dependence on the internal temperature of the amplifier, whose output was considerably greater when cold than when fully heated.

Although we did not receive any instruction manual or circuit details with our test sample of the Pro-Power Four, a check of our file on the Soundcraftsmen PCR800, which we tested a little over two years ago, showed that it used thermal feedback to reduce the power-supply voltage (and thus the power) to safe values as the output transistors heated up. Apparently a similar system is used in the Pro-Power Four, though with much less drastic

effects on the amplifier's power capability. Like the PCR800, the Pro-Power Four's had nearly identical dynamic- and clipping-power outputs, with slightly less power available during tone bursts of 50 to 100 milliseconds than with bursts of 20 milliseconds or longer than 200 milliseconds. This appears to be a characteristic of its thermally controlled power supply.

The 1,000-Hz harmonic distortion was less than 0.013 percent from 1 to more than 200 watts into 8 ohms. With 4-ohm loads the distortion was less than 0.032 percent up to 300 watts, and with 2-ohm loads the distortion was between 0.02 and 0.07 percent from 1 to 300 watts. Closer to the clipping power, more than 400 watts, the amplifier's operating conditions and the distortion readings were changing too rapidly to measure. At its rated power of 205 watts per channel into 8 ohms, the distortion was less than 0.01 percent from 20 to 300 Hz, rising smoothly to between 0.02 and 0.03 percent from 3,000 to 20,000 Hz. At half-power and less, the readings were generally lower than at rated power.

The Pro-Power Four required an input of 72 millivolts to develop an output of 1 watt into 8 ohms. The A-weighted hum and noise level was -84 dB referred to 1 watt. Its frequency response was flat within +0.1, -0.3 dB from 5 to 20,000 Hz, down 3 dB at 140 kHz, and down 6 dB at 270 kHz. The slew factor was greater than 25. The ampli-

fier was stable when driving complex simulated speaker loads, and its EIA reactive-load factor was 0.82 dB at 63 Hz. The LED power indicators were much more accurate than most such devices, corresponding closely to the measured output at high levels and matching their "steady-state" readings during the 20-millisecond tone bursts of the dynamic-headroom test.

Comments

The inevitable comparison between our test results with the Pro-Power Four and the PCR800 shows a close similarity between the two when driving 8- and 4-ohm loads, but the Pro-Power Four has a far greater power output into 2 ohms. In its normal low-speed mode, the fan of the Pro-Power Four is so quiet that we were unable to hear any sign of its operation from the front of the amplifier. When it switched to high speed, however, the noise was quite annoying, though under normal operating conditions it's doubtful that this would occur.

The nomenclature of the Soundcraftsmen Pro-Power Four implies that it is a professional product, though it is not a part of the company's extensive line of professional amplifiers. It might well be suitable for that exacting service, since we were unable to overheat it or damage it under any operating conditions, and even the noisy fan would not be audible in an environment with high ambient sound. However, we prefer to think of it as a very good, powerful, and well-protected home music amplifier.

Despite our knowing little of the design details of the Pro-Power Four, our measurements leave no doubt that it is a close relative—with enhanced performance—of the PCR800, which is still in the Soundcraftsmen line. It has a substantially greater current-output capability, greater high-frequency power capability, a quieter cooling system, and the additional features of switchable outputs for two sets of speakers and an excellent output-level display. The price difference between the two amplifiers is modest and easily justified by the Pro-Power Four's added performance and features.

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For those of you who have wanted to listen to *high quality* sound both in and out of the listening room, your wait is over. AR's new Powered Partners™ stereo loudspeakers are unlike any portable or transportable speakers to date. They feature an individual powerful amplifier, a 4" woofer and 1" tweeter in each impact-resistant, black crackle, cast aluminum enclosure. They also feature individual volume and tone controls, inputs for anything from an FM or cassette

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JOOK LEUNG

SANSUI D-705 CASSETTE DECK

Craig Stark, Hirsch-Houck Laboratories

SANSUI has long been known for its tuners and amplifiers, but the D-705 is the first of its cassette decks we have had occasion to test. A three-head, dual-capstan unit, it features Dolby B and Dolby C noise reduction, memory rewind, fifteen-selection automatic music search, and a user-adjustable bias control.

The two capstans are driven by an electronically controlled DC motor; a second DC motor is used to turn the reel hubs. The D-705 has separate hardened permalloy record and playback head elements housed in a common case, permitting direct comparison between the source and the recorded result. The transport is solenoid operated and controlled by a well-designed combination of large touchplates and smaller push-buttons.

The rear-illuminated cassette well is conventional in design and has built-in sensors that automatically set the appropriate bias and equalization for the loaded cassette. A front-panel control permits fine-tuning the record bias, although any adjustments must be made by ear.

A single rotary control for both the left and the right channels is used to adjust record levels and balance. A smaller knob controls the output at the rear jacks and the

front-panel headphone jack. Signal levels are shown on a twelve-segment-per-channel fluorescent display calibrated from -40 to +8 dB. A four-digit fluorescent readout serves as a conventional tape counter, and it can be switched to show the number of the current track programmed into the Automatic Music Program Selector (AMPS). Additional switches are used for the Dolby circuits, memory rewind/replay, and external timer activation. There are no provisions for microphone input or remote-control operation.

The Sansui D-705 measures 17 inches wide, 4 $\frac{3}{8}$ inches high, and 12 $\frac{3}{8}$ inches deep. It weighs 13 pounds. Price: \$470. Sansui, Dept. SR, 1250 Valley Brook Ave., Lyndhurst, NJ 07071.

Lab Tests

As received, the azimuth alignment of the heads on our sample of the D-705 was seriously in error. The misalignment produced a treble loss of slightly more than 10 dB at the highest frequency, 18,000 Hz, on our IEC-standard BASF calibrated playback tapes. After we corrected this problem (which could not be done by an ordinary user, who would have to take the deck in for service), the playback response of the deck with both ferric (120-

microsecond) and CrO₂-type (70-microsecond) tapes turned out to be absolutely identical at all measuring points from 31.5 to 18,000 Hz. The low-end response was good, but there was a slight drop (up to 2.6 dB) at the highest frequencies.

At a 0-dB record-playback level (250 nanowebers per meter), using our center-line sample cassettes of TDK MA (metal), TDK SA (high-bias), and TDK AD (ferric), the response from the three tapes was typical except in one respect. Because all tapes run into treble saturation on all machines at this level, it is our practice to see how much additional high-frequency headroom is made available when Dolby C noise reduction is switched in. (Dolby C uses slightly less treble pre-emphasis during recording than Dolby B, so it leaves more capacity on the tape for the signal itself.) With a metal tape and Dolby C, we frequently find that a deck's overall record-playback response is within a few decibels of being flat at the 0-dB level all the way out to the 20,000-Hz upper limit of our measurements.

In the case of the D-705, however, we discovered that switching in either Dolby circuit (B or C) also activated a built-in FM multiplex filter whose -3-dB point was 16,600 Hz. There was essentially no response at frequencies above this point as long as the Dolby circuits were used. Since noise reduction is essential for making serious cassette recordings, we must conclude that the effective

SURGEON GENERAL'S WARNING: Smoking Causes Lung Cancer, Heart Disease, Emphysema, And May Complicate Pregnancy.

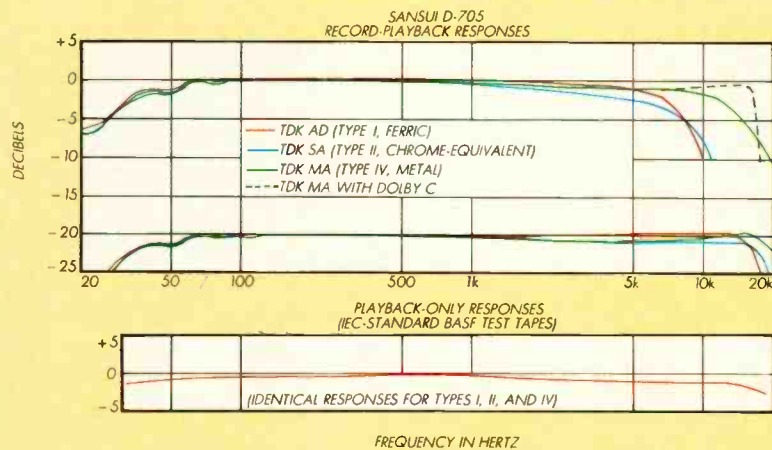
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Excellence.
The best live up to it.



FEATURES

- Separate record and playback heads
- Dual-capstan, solenoid-controlled transport
- Dolby B and Dolby C noise reduction
- Fifteen-selection music programming
- Four-digit fluorescent tape counter
- Twelve-segment-per-channel fluorescent peak-reading level display
- User-adjustable bias fine-tuning control
- Playback level control and headphone jack
- Memory rewind
- External timer switch



LABORATORY MEASUREMENTS

Fast-forward time (C-60): 86 seconds

Rewind time (C-60): 85 seconds

Speed error: none

Dolby B tracking error: +1, -0.5 dB

Dolby C tracking error: ±1 dB up to 15 kHz (see text)

Wow-and-flutter: 0.024% wrms, 0.08% DIN peak-weighted

Line input for indicated 0 dB: 79 mV

Line output at indicated 0 dB: 0.51 volt

Meter indication at IEC-standard 0 dB: +0 dB

Tape: TDK AD (Type I, ferric)
IEC 0-dB distortion: 0.42%
Meter indication at 3% third-harmonic distortion: +5 dB
Signal-to-noise ratios (in decibels):

	Unwtd.	A-wtd.	CCIR
NR off	54.5	58.7	55.8
Dolby B	60.5	67.3	66.2
Dolby C	63.0	74.6	75.1

Tape: TDK SA (Type II, chrome-equivalent)
IEC 0-dB distortion: 0.74%
Meter indication at 3% third-harmonic distortion: +3 dB
Signal-to-noise ratios (in decibels):

	Unwtd.	A-Wtd.	CCIR
NR Off	55.9	59.8	56.7
Dolby B	60.5	68.2	67.0
Dolby C	62.5	75.7	75.9

Tape: TDK MA (Type IV, metal)
IEC 0-dB distortion: 1.05%
Meter indication at 3% third-harmonic distortion: +3 dB
Signal-to-noise ratios (in decibels):

	Unwtd.	A-Wtd.	CCIR
NR Off	55.7	59.3	56.3
Dolby B	60.5	67.8	66.5
Dolby C	62.5	75.0	75.5

record-playback response of the D-705 is limited to 16,600 Hz, even at -20 dB. Unlike most hi-fi cassette decks, the D-705 provides no way to defeat the FM multiplex filter.

The D-705's signal-to-noise ratio performance, especially with ferric and chrome-type tapes, was above-average. Wow-and-flutter, however, which was greater than average for a

dual-capstan deck, was audible. Dolby tracking error was negligible up to the 16,000-Hz limit but was severe above that point because of the multiplex filter.

The overall signal input and output levels were within the normal range for today's audio components. The bias adjustment produced a variation of ±5 dB at 10,000 Hz with CrO₂-type tapes and about ±1 dB with metal tape, which is typical for this type of control. While there was no pitch adjustment, none was needed since speed error was negligible.

Comments

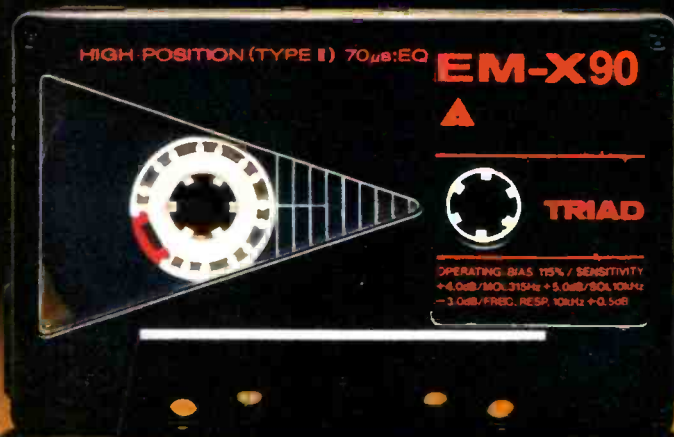
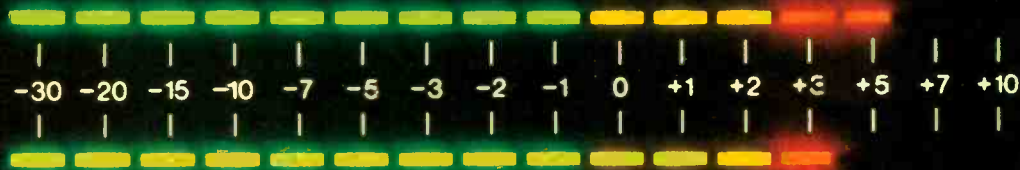
Our listening tests of the D-705 tended to confirm what our instruments measured. In playback or simultaneous recording and playback of loud orchestral music, the performance of the D-705 was certainly up to par, and its bass response was better than most. The high-frequency limitation imposed by Sansui's insertion of a 16,600-Hz filter was not readily apparent when listening to prerecorded cassettes, most of which have less than outstanding treble content. And, of course, the response was quite adequate for recording FM broadcasts. On recordings made from CD's, however, the lack of the extreme high frequencies was evident.

More serious—to my ears, at least—was the wow-and-flutter I heard when listening to more delicate musical selections, especially those containing sustained tones. I am admittedly more sensitive to flutter than many other listeners, but I felt that the wow-and-flutter of the D-705 contributed to a perceptible lack of clarity (an absence of the ringing character on piano notes, for example) and of spatial definition (instruments could not be as clearly located within the stereo sound stage on dubs as on the original compact discs).

Certainly the sound quality was adequate for general listening, however. And for many people, the D-705's convenience in programming listening selections and its ease of operation will be powerful attractions. In the end, yours are the ears that must be satisfied, so listen and compare.

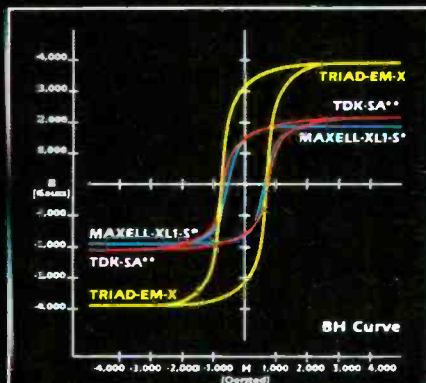
Circle 144 on reader service card

TAPE IT TO THE LIMIT.



The dawn of a new tape decade.

The digital age has pushed recorded sound to the limit. Now Triad Digital Transcription Tape takes you there, too. It's the first totally new tape for your deck in a decade.



Comparison of the magnetic flux of Triad EM-X vs. two leading tapes under identical recording conditions. EM-X records approximately twice the signal, for increased dynamic range and lower distortion at higher signal levels.

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Triad's exclusive, patented metal tape formulations deliver maximum performance with a composition of exceptionally dense, uniform ferrous hydroxide particles. Their increased surface area holds more signal with less distortion than previously possible.

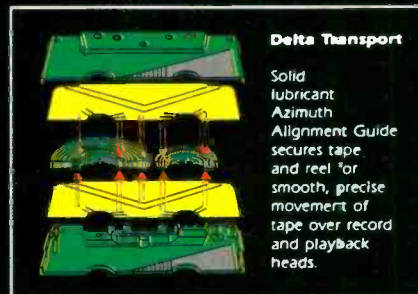
Triad and true performance for every deck.

Unlike pre-digital tapes designed for sources with dynamics averaging only 45-50dB, Triad's advanced metal technology delivers over 80dB of exciting, true-to-life dynamic range. With Triad, tape decks can actually perform beyond the limits of their own manufacturers' expectations.

Triad MG-X's high retentivity and coercivity are optimum for metal position transcription of digital material. For true metal quality in the high (CrO₂) position, the EM-X's reduced coercivity and controlled retentivity deliver more high frequency headroom and dynamic signal with higher overload levels than any other Type II tape. And for the widest dynamic range with the flattest frequency response in the normal position, it's the cobalt-doped Triad F-X.

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high frequency response and spatially accurate, three-dimensional sound. The unique Delta Transport housing also features a full-length, solid lubricant slip shield for less friction, reduced wow-and-flutter and prolonged tape life.

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Equalization can help you shape the sound of your system to fit your room, your recordings, and your taste.

EQUALIZERS

BY MICHAEL SMOLEN

THE goal of any hi-fi system is to reproduce sound accurately. The key to accurate sound is a flat frequency response, which means that the system reproduces all audible frequencies supplied to it in proper balance to each other. All stereo components, however, alter this ideal to some degree or other, and equalizers, which change the amplitude of specific parts of the audio spectrum, can help correct anomalies in a system's frequency response.

Although there are as many theories of equalization as there are people who use equalizers, only two reasons exist for using them: to correct specific problems in a recording or a room (generally to restore flatness), or to alter sound for purely musical or creative reasons. At one end of the spectrum you'll find audiophiles who will tell you that an equalizer provides you with a systematic method of sound shaping, and they'll whip out books and show you the curves to prove it. At the other end stand the knob-twiddlers, those who insist that an equalizer is nothing more than a sophisticated version of the tone controls on your receiver—keep tweaking the knobs until you hear something you like, then stop. Usually the best approach to equalization lies somewhere between these two extremes—informed knob-twiddling, if you like.

Because no equalizer can completely eliminate a poor acoustical situation, changes in speakers, speaker placement, and the room itself should be addressed before turning to the aid of an equalizer. When you listen to music in any room, the sound you hear arrives at your ears from one direct path and many indirect paths. The indirect paths are reflections bouncing off room surfaces and furnishings, and, depending on the size of the room, the greater part of what you hear may be reflected sound.

Different wall and floor materials, different furnishings, and the number of people in the room all have a significant effect on the sound. Soft surfaces (carpet-

The SAE E101 (\$650), left, is an outstanding dual-band parametric equalizer with ten memory locations and digital readouts of level, frequency, and bandwidth for each band.



Equalizers are available in many forms, from simple notch filters to forty-four-band, one-third-octave graphic models with built-in spectrum analyzers.

ing, drapes, and overstuffed sofas, for example) have a tendency to absorb high frequencies, and too much absorption can make a room sound "dead." Flat surfaces that are not stiff will bend with low frequencies and absorb bass energy. Hard surfaces (glass, metal, and tile, for example) will reflect sound, creating a "live" room, and too many hard surfaces can result in extreme reverberation, as in a gymnasium, for instance, or a large concert arena.

The size and shape of a room also have a profound effect on the sound. The more nearly equal a room's dimensions are to each other, the more low-frequency reflections meet at the same time and place, creating standing waves. At certain points along the standing-wave path, the reflected and direct waves will always cancel each other out, while at other points they will reinforce each other. As you've probably gathered, an ideal listening room would be one with stiff walls, different dimensions (and with no dimension a multiple of another), and facing surfaces not entirely parallel. Because most listening rooms were originally built as living rooms or dens, however, they rarely exhibit ideal properties for a flat response, and, accordingly, they alter the sound heard in them.

Equalizers perform by allowing you to boost or attenuate frequencies within a specified frequency range. But, of course, all equalizers are not the same. They differ from one another in how they perform various functions, how flexible they are in pinpointing specific frequencies within a given range, how they deal with the frequencies surrounding those being modified, and, of course, how much they cost.

Equalizer Types

While equalizers are available in many forms, from simple notch filters to forty-four-band one-third-octave graphic models with built-in spectrum analyzers, those generally encountered in the home are simple graphic or parametric equalizers. The *graphic equalizer* is the most common type found in the home and in the car. It is called a graphic equalizer (or EQ) because the actual positions of its controls (sliders) provide a fairly accurate graphic display of the frequency response obtained by using the equalizer. A graphic EQ generally consists of ten to thirty-six slider controls (these are not absolute limits) oriented vertically along a faceplate. A ten-

band EQ, for example, may have sliders corresponding to center frequencies of 30, 60, 120, 240, 480, 960, 1,920, 3,840, 7,680, and 15,360 Hz. Each slider is moved up or down to boost or attenuate the one specific frequency assigned to it.

Most graphic equalizers have a boost/cut range of ± 12 dB, although some professional models have a ± 15 -dB range. Individual bandwidths are not adjustable on graphic equalizers. A couple of cautions concerning the use of graphic equalizers:

1. Remember, a boost of 10 dB takes ten times as much amplifier power at any frequency, and such a large increase can quickly destroy a speaker's drivers or drive an amplifier to clipping.

2. A slider works on the entire octave, not just the center frequency; the center frequency is where the response peaks, but the nearby frequencies within the octave are affected as well. The extent to which they are affected depends on whether the response curve is peaking (bell-shaped in either direction) or shelving (a rise or drop in frequency response that tapers off to a preset level), the ratio (Q) of center frequency to bandwidth, and the amount of boost or attenuation.

3. Adjacent bands are sometimes interactive, usually not. For example, when two adjacent bands are at maximum boost, the octave between the nominal centers is boosted somewhat. The same holds true for maximum attenuation. And when one band is all the way up and the other all the way down, the actual boost and cut are a little less than maximum.

4. If you have a piece of equipment incapable of reproducing 20 kHz, a graphic equalizer with a 20-kHz slider is not going to allow you to "find" information at 20 kHz.

Parametric equalizers are generally considered to be the most accurate and flexible of all equalizers, providing three ranges of control as compared with a graphic equalizer's single range. They are called parametric equalizers because individual parameters of the equalization process—such as frequency selection, the degree of boost or attenuation, and the bandwidth about that frequency—are continuously variable and can be adjusted without interaction between them. Unfortunately, to find a parametric equalizer for home use you may

have to explore the professional sound market.

Other kinds of equalizers are *notch filters* and *bandpass filters*. A notch filter is a specialized filter that produces a sharp notch in the frequency response of a sound system. It is generally used to attenuate frequencies with a very narrow bandwidth so as not to have a great effect on the rest of the program. A typical professional application of a notch filter is to set it at 60 Hz in order to remove AC hum from a system; the narrow bandwidth prevents the severe attenuation at this frequency from affecting the rest of the audio bandwidth.

A bandpass filter is an equalizer with both low- and high-frequency attenuation. Once set with high and low sharp-cutoff points, a bandpass filter passes through only those frequencies between the two points. The passband is often fairly narrow, and the cutoff slope is usually 18 dB per octave for maximum effectiveness. Certain equalizers provide both notch and bandpass filters in one package, and some parametric equalizers can closely approximate a notch filter's response.

Some graphic equalizers found in the home contain a *spectrum analyzer*, and when shopping for one of these you should be very careful. A true real-time spectrum analyzer is used to equalize speaker systems by feeding pink noise into the signal path and observing the response as picked up by a microphone attached to the analyzer. Since many spectrum analyzers found in home equalizer packages have neither pink-noise generators nor microphones, they become fancy light shows for which you have paid a premium. If you are very serious about using an equalizer, however, you should probably try to find one with a usable spectrum analyzer. It will make correcting room anomalies easier and far more accurate.

A large number of manufacturers currently market equalizers in a variety of sizes, combinations, and prices. Companies such as ADC, Akai, Azden, Denon, Hafler, Kenwood, Luxman, Onkyo, Pioneer, Sansui, and Teac all make fine basic and upscale graphic equalizers. For more professional models, including those with true real-time spectrum analyzers, turn to Accuphase, Audio Control, dbx, JVC, Parasound, Soundcraftsmen, Technics, Vector Research, and Yamaha.

Shopping for a parametric equalizer is a little harder, with only SAE



Soundcraftsmen's AE2000 (\$799) is a ten-band graphic equalizer. Special features include a Differential/Comparator for achieving accurate unity gain and an automatic scanning mode in which response is adjusted one octave at a time using pink noise.

The dbx 10/20 (\$1,200) is a state-of-the-art computerized ten-band octave equalizer/analizer that can automatically equalize a speaker system to a room in 45 seconds or less. The system includes a sound-pressure-level meter and ten memory locations.

The Technics SH-8065 (\$485), a twelve-band graphic equalizer/analizer, has a unique "direct-touch" system that enables the user to create an equalization curve simply by running a finger across the touchpad control area on the front panel.

a standout in the home audio market. If you turn to professional sound companies the choice is considerably larger, and so, usually, is the price. In this market companies such as Ashly Audio, Biamp, Crown, JBL/Urei, LT Sound, Orban, and Tascam make parametric equalizers suitable for home use. JBL/Urei also makes a very nice, but very expensive, notch/bandpass-filter equalizer. Prices range from \$60 to \$1,500.

Autosound companies with after-market graphic equalizers include Alpine, Audio Control, Blaupunkt, Cerwin-Vega, Clarion, Concord, Denon, JVC, Kenwood, Linear Power, Parasound, Pioneer, Realistic, Sanyo, Soundstream, Technics,

Yamaha, and Zapco. Prices range from \$40 to \$450. The only auto-sound parametric equalizer available comes from HiFonics (\$400), and the only autosound equalizer with a built-in spectrum analyzer is made by Coustic (\$300).

EQ and the Audio Spectrum

Equalization can be regarded as any intentional modification of an audio system's frequency response. The most important thing to consider when setting out to equalize a system is the state of your ears. Remember that your ears lose bass frequencies at lower volumes and higher frequencies as you get older; the fact that everything sounds great when you turn the volume up has

more to do with psychoacoustics than your skill with an equalizer. And that leads to two other critical points—the effect of equalization on dynamic range and the importance of unity gain.

When applying equalization to a high-level signal, each time you boost a frequency it gets closer to its maximum “safe” level. If the original signal is at its maximum safe level, even judicious amounts of equalization can cause the signal to distort, and you have to bring the overall signal level down. On the other hand, the attenuation of certain frequencies may make it possible to bring the overall signal level up. Always strive to achieve unity gain—where output level equals input level—when using an equalizer; it will prevent an equalized signal from damaging your system and make equalized recording much easier.

Although most equalization is done by ear, it's very helpful to have an idea of what frequencies affect what instruments and which will give the overall desired effect. On the whole, the audio spectrum can be divided into four parts: bass (20 to 200 Hz), low middle (200 to 1,000 Hz), high middle (1,000 to 5,000 Hz), and high (5,000 to 20,000 Hz). When you modify the frequen-

cy response in the 10- to 200-Hz region, you affect the fundamentals and the major harmonic range of low-frequency material, sounds that are more often felt than heard. By boosting this range you can give music a sense of power or punch. Decreasing the range will weaken and muddy the bass. Boosting and attenuating these frequencies can also give music a feeling of fatness or thinness. Be careful, however: too much boost here can make the sound boomy.

In the 200- to 1,000-Hz range are the fundamental notes of most instruments, and modifications in this range can result in dramatic changes in overall program energy. Increases can give music impact, but because the human ear is very sensitive to these frequencies it is easy to overdo things; you'll find that minor changes will have major effects on the music. Specifically, frequencies around 200 Hz can give the bass range a feeling of warmth without a loss of definition, and those between 500 and 1,000 Hz make instruments sound horn-like. Too much boost in this range can cause listening fatigue.

High-frequency instruments are controlled in the range between 1,000 and 5,000 Hz. Boosting this range can add clarity, definition,

and brightness, but too much boost, especially between 1,000 and 2,000 Hz, can make the sound tinny. The upper midrange, between 2,000 and 4,000 Hz, covers important speech-intelligibility sounds, where too much boost will add a lisp to vocals. This region is also the common crossover range for most loudspeakers, and many peaks and dips can occur when crossover characteristics are exaggerated. Boosting in this range can also make music seem closer to the listener. Again, too much boost in this range can cause listening fatigue.

The 5,000- to 20,000-Hz region is composed entirely of the harmonic structures that give instruments their unique sounds. Boosting frequencies in this range can add sparkle and brilliance to high-frequency string and woodwind instruments, for example. But too much boost in this region can produce sibilance on vocals and awkward-sounding percussion instruments. Boosting at around 5,000 Hz can make music seem louder—a boost of 6 dB at 5,000 Hz can make the overall sound level *seem* as if it has been increased by 3 dB—and attenuating can make music seem more distant and transparent.

With these generalizations in mind, you should also consult the accompanying sound chart, which provides guidance for acoustic musical instruments. If you listen to electric instruments, you may find the following ranges useful.

Electric bass: attack, 700 to 1,000 Hz; bottom, 60 to 80 Hz; string noise, 2,500 Hz.

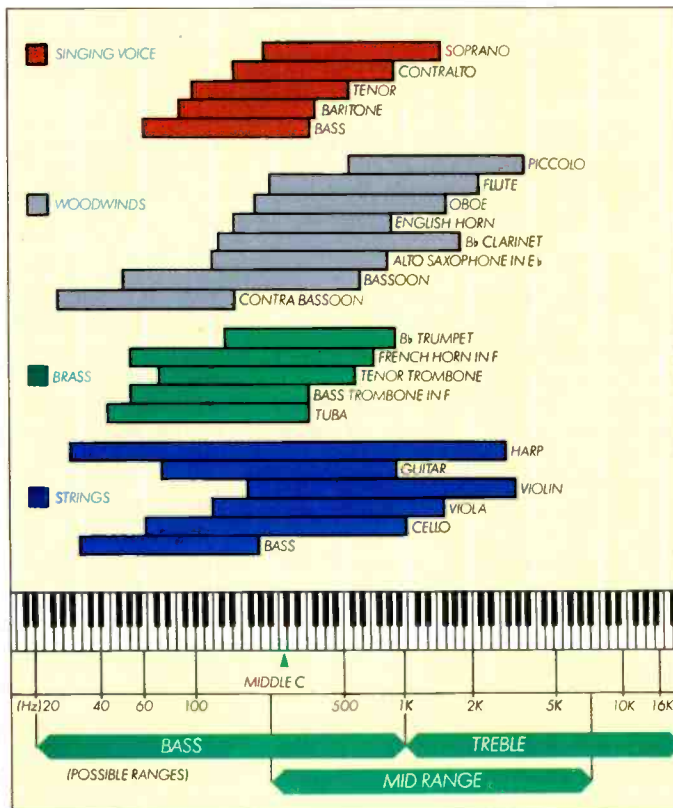
Electric guitar: full, 240 Hz; bite, 2,500 Hz.

Electronic keyboard: bass, 80 to 120 Hz; body, 240 Hz; presence, 2,500 Hz.

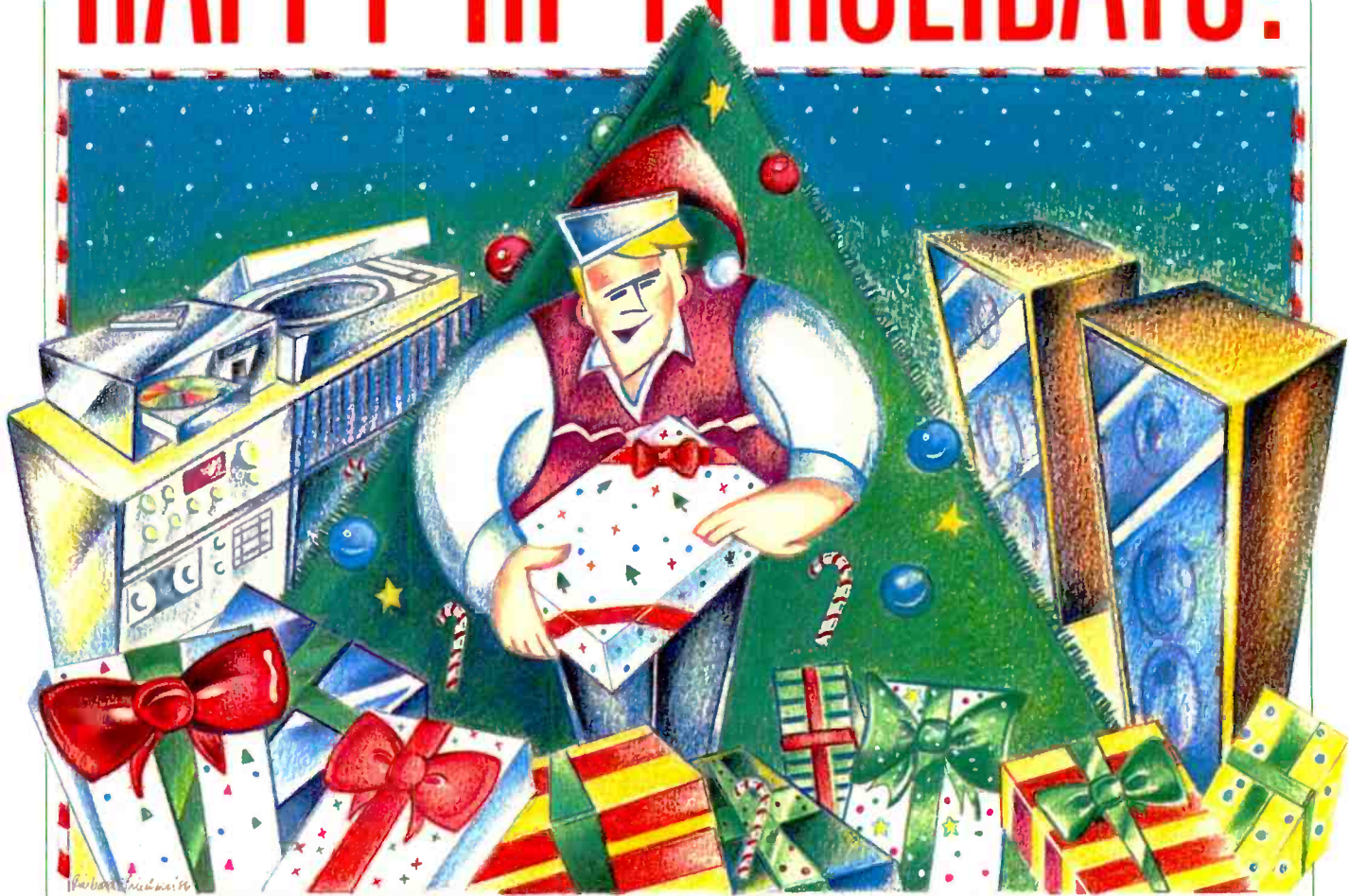
An equalizer is a powerful tool, and its proper use can add greatly to your listening enjoyment. It will not cure everything that's wrong with your hi-fi system, but it will help you correct minor problems in room acoustics and allow you to modify a recording's frequency response to your own taste.

Experimentation is the key to using equalizers, and no book or manual can take the place of hands-on experience. With a little time and patience, however, you will be rewarded with a new appreciation of audio technology and the reproduction of music. And remember, always boost sparingly! □

Equalizing by ear is much easier when you have an idea of where instruments fall within the audible frequency spectrum. The chart at right shows frequency ranges, both in hertz and referred to a piano keyboard, for singing voices and a number of acoustic instruments. When you are equalizing, be sure to listen to an instrument's entire range (for instance, cello between 60 and 1,000 Hz) before making a final setting.



HAPPY HI-FI HOLIDAYS!



BOOKS, candy, and flowers are standard gifts for suitors to present to women. Perfume is usually welcome, and there is a tradition, among blondes at least, that diamonds are a girl's best friend. These days jewelers are trying to broaden their market by attempts to convince women that giving a man a diamond ring is also a very friendly act.

We would not dream of arguing with this move for gift equality between the sexes, but in the real world an audiophile's parents, spouses, friends, concubines, and significant others usually complain that he (or she) is very difficult to shop for. STEREO REVIEW tries to help at Christmas by providing lists of gift suggestions from our staff and regular contributors.

Typically, some of them get confused between what they would like to give and what they'd like to receive. Still, the resulting list may provide you with ideas for things you can hint for. You might even give the list to someone from whom you can reasonably expect a tangible friendly act during the holidays. Our suggestions are limited to accessories and software, things that cost less than an actual piece of electronic equipment. If you can persuade someone to give you, say, a Yamaha DSP-1 Digital Sound Field Processor or a pair of Carver's Amazing Loudspeakers, go for it. You don't need any help from us. Failing diamond rings, however, here's what we suggest.

The Editors



ROBERT ACKART
Contributing Editor

For my Christmas suggestions there are two full operatic recordings, two single discs, and one video performance that I recommend highly. First, on video, Britten's *Peter Grimes* with Jon Vickers, Heather Harper, and Norman Bailey, conducted by Colin Davis (Canon/HBO), is a triumph of interpretation and dramatic intensity; the photography is excellent.

On single discs there are "Kathleen Battle Sings Mozart" (Angel), an unusually beautiful and tasteful example of this artist's work, and Canteloube's *Chants d'Auvergne* (CBS), sung by Frederica von Stade in a warm and seductive performance. The first opera is Purcell's *Dido and Aeneas* with Jessye Norman (Philips), conducted by Raymond Leppard, a beautifully balanced and dramatically cogent interpretation of this significant score. The second opera, Rossini's *Il viaggio a Reims*, written for the coronation of Charles X of France, is a marvel of comedy in music with a stellar cast led by Claudio Abbado (Deutsche Grammophon).



Pickering's PST-2 stylus timer can be reset after each stylus change.

CHRISTIE BARTER
Music Editor

Dedicated classical-music lovers will welcome the latest Penguin Guide published by Viking Pen-



The Ortofon electronic stylus cleaner will eliminate vinyl-sludge buildup.

guin, Inc., and available in book and record stores. Compiled by three English critics—Edward Greenfield, Robert Layton, and Ivan March—*The Penguin Guide to Compact Discs, Cassettes, and LPs* is a comprehensive critical survey of the classical repertoire available on American and European CD's, with alternate recordings on cassette and LP suggested when the imports are either hard to find or too expensive. It lists for \$14.95 and is wonderful for browsing through whether you're in a buying mood or not.

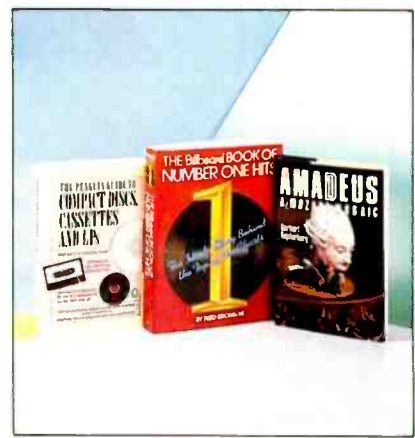
Another browser's delight is *The Billboard Book of Number One Hits* by Fred Bronson, also \$14.95. This survey starts with (*We're Gonna Rock Around the Clock* by Bill Haley and the Comets, which topped *Billboard's* "Music Popularity Chart" (now "The Hot 100") on July 9, 1955. It culminates, 605 pages later, with USA for Africa's charity single *We Are the World*, which reached No. 1 on April 13, 1985.

A third nifty gift for the music lover on your list is a Fiesta Arts poster depicting the instruments of the symphony orchestra or the one devoted to instruments commonly used by pop and jazz musicians. Each poster measures a little over 2 x 3 feet and is available from Fiesta Arts, Inc., Greenvale, NY 11548, for \$7.99 (plus \$1.50 for shipping and handling).

LOUISE BOUNDAS
Managing Editor

Many of my friends have large collections of LP's, and, with the advent of the compact disc, they've become especially conscientious about taking care of their vinyl discs—a lot of them might not ever make it to CD. With that in mind, I plan to stuff a few stockings with Discwasher's VRP antistatic record sleeves (a package of ten for \$3.50). And a couple of people on my gift list will get a Pickering stylus timer (\$25), which measures stylus wear up to 1,000 hours and can be reset when the stylus is replaced.

Not all LP's are out of production, of course, and I even know a few audiophiles who don't have CD players yet. One of them, a special friend who is a jazz collector, yearns for a recently issued twenty-one-disc set, "The Complete Keynote Collection" (\$210). A joint project of Nippon Phonogram Co., Japan, and PolyGram, the limited-edition set consists of 334 jazz performances of the Forties by such jazz immortals as Lester Young, Roy El-



These recent publications are perfect for reference, fun, or fact checking.

dridge, Coleman Hawkins, Barney Bigard, Bud Freeman, and so on. The recordings were all originally produced by Harry Lim.

Finally, for some rather clumsy CD novices I know, I've settled on some replacement "jewel boxes" from Recoton (two for \$4.39).



Nagaoka's chamois pad is one of the best CD dirtbusters available.

MARGARET BRUEN
Assistant Art Director

At the top of my list is "Ella Fitzgerald Sings the Cole Porter Songbook" (Verve VE2-2511), a double album that was recorded in 1956. It's Fitzgerald at her best, singing Porter's best!

WILLIAM BURTON
Technical Editor

I don't like to lean over at dangerous angles to read the spines of compact discs, and Recoton's CD-10 storage cabinets (\$11.99 each) hold the CD's horizontally so I can easily find the one I want to hear. Pressing on the jewel box pops it into your hand for convenient removal. To grow as your collection grows, the plastic cabinets lock into each other vertically or horizontally, and each holds ten CD's in their jewel boxes. Sound Accessories has a similar plastic rack that holds six double CD's. It lacks the Recoton's spring-release mechanism but is priced at only \$7.

CHRISTOPHER GREENLEAF
Contributing Editor

As a recording engineer and as an audio writer I used to long for a means of aligning, checking, and adjusting my many electronic gad-

gets. All of my test tapes used to wear out or find their way into uncharted corners of my personal cosmos. The good folks at Denon have issued what could be classified as a CD or an audio accessory, but I call it a godsend—"The Denon Audio Technical CD" (C39-7147). It is a ninety-nine-track compendium of CD test signals and measurement signals, along with written descriptions of just how to use them. I also recommend, once you've checked and adjusted your system, that you buy the CD of Mendelssohn's motets and psalms on Harmonia Mundi (091142). It is pure, exalted singing recorded with stunning sound quality.

DAVID HALL
Contributing Editor

There are two items that rank high on my Christmas list this year. The first is *Busoni the Composer* by Anthony Beaumont (Indiana University Press, \$32.50), which not only represents a badly needed updating of the standard 1933 biography by Edward J. Dent but also offers a far more detailed discussion of the music by this legendary composer/conductor/piano virtuoso. My second choice is *Recorded Plays: Indexes to Dramatists, Plays, and Actors* by Herbert H. Hoffman (American Library Association, \$20). This book is a must for theater buffs, listing some 700 plays in 1,800-plus re-

Sony's six-CD carrying case can weather the sun and a good pounding.



cordings as well as spoken-word collections.

RALPH HODGES
Contributing Editor

For years I have waited for a stylus-cleaning system that could be intelligently integrated with a turntable—particularly with some of the later radial-tracking and drawer-loading models whose innards can be awkward to get to. Unfortunately, this hasn't happened, so in the interim a separate electronic cleaner is required. I have begun using one from Ortofon (RC-015, \$20) with general satisfaction. I would advise some in-store experimentation, however, with the record player that the recipient of the gift owns to be certain that the cleaning device fits and functions properly.



Tape-deck cleaning takes about 15 seconds with the Maxell R-CT.

STODDARD LINCOLN
Contributing Editor

One of the most delightful gifts currently found on bookstore shelves is Herbert Kupferberg's *Amadeus, A Mozart Mosaic* (McGraw-Hill, \$14.95). Rather than writing the usual chronological biography, Kupferberg presents a series of informative essays on such intriguing subjects as "The Prodigy Market," "Mozart's Dog," and "The Scatological Mozart."

You might want to complement such a gift with Itzhak Perlman and



James Levine in an elegant account of Mozart's Violin Concerto in B-flat Major, along with two rondos and an adagio (Deutsche Grammophon 415 958-2), a zippy performance on authentic instruments of the Symphonies Nos. 29 and 33 by the English Baroque Soloists conducted by John Eliot Gardiner (Philips 412 736-2), or even the Juilliard Quartet's splendid reading of the six Haydn Quartets (CBS Masterworks M3 37856). Like so many other people, I'm obviously on a Mozart kick, right now—and what could be more delightful for a joyous Christmas?

WILLIAM LIVINGSTONE
Editor in Chief

Treasured LP's require care, and the devices for cleaning the records and playing equipment make useful gifts for the audiophile. It's easier to remove the dust from an LP after you've reduced its charge of static electricity with one of the antistatic guns marketed by Discwasher (\$23) and Ortofon (\$21.95).

You can clean your stylus with a cotton swab and alcohol, but it's more fun (and probably more effective) to do it with materials designed specifically for that purpose. Audio-Technica has a good stylus-cleaning kit (\$13.95) that I have used and have recommended to others.

To simplify maintenance of tape

Tina breaks every rule on her latest Capitol album—also on CD.



Discwasher's Zerostat 3 works equally well on records, ties, and stockings.

decks every owner should have one of the cleaning cassettes designed to keep tape heads in pristine condition. Good ones are marketed by such companies as Allsop and Maxell, among others.

A good stocking stuffer would be a bottle of Tweek, a liquid contact enhancer intended to facilitate electron flow through the various jacks and plugs in electronic systems. It is distributed by Sumiko, and a small bottle costs \$15. I've never used it, but I'm curious about it and eager to give it a try.

SUE LLEWELLYN
Art Director

For Christmas I would like to find a copy of Tina Turner's new album, "Break Every Rule" (Capitol PJ-12530-1), under my tree. Even more adventurous than her comeback LP, "Private Dancer," this record also features the talents of Phil Collins, Steve Winwood, David Bowie, Bryan Adams, Mark Knopfler, and Robert Hine. Now that's a line-up to rock with!

IAN MASTERS
Contributing Editor

Audio fans are impossible to buy for without risking some sort of offense: they have pet products and ones they consider hopeless. So unless you know for sure what the recipient wants, perhaps you would

be well advised to buy something useful but noncontroversial. My choice is patch cables. All audiophiles need them, and they rarely have enough. The particular brand doesn't matter—unless, of course, they insist on gold plugs and high-tech wires. On one end of the scale you'll find Radio Shack, with an extensive line of affordable cables, and at the other there's Monster Cable's line of audiophile cables to carry you through the digital age.

LOUIS MEREDITH
Contributing Editor

Conductor André Previn is as persuasive when talking about symphonic music as when leading a major orchestra. He does both in his TV series "The Story of the Symphony," made by the BBC and now available on six 90-minute videocassettes from Home Vision. The featured orchestra is the Royal Philharmonic, and the six segments are devoted to works by Haydn and Mozart, Beethoven, Brahms, Berlioz, Tchaikovsky, and Shostakovich. Available in VHS Hi-Fi stereo, the cassettes list for \$39.95 each. If you don't find them in stores call Home Vision at (800) 262-8600; in Massachusetts, (617) 879-1720. The series won the 1984 British Academy Award for best television sound.

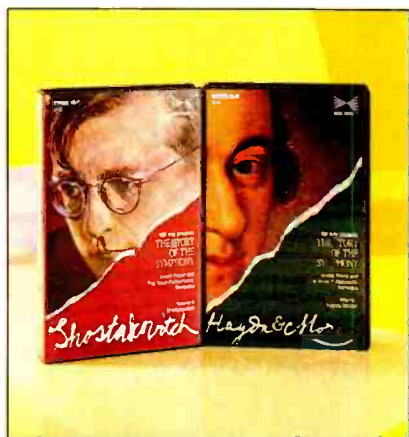
Fans of Windham Hill records should be happy to receive the

Recoton's stackable CD holders are spring-loaded for instant eject.





Windham Hill videos, four cassettes that offer visual interpretations of performances by such artists as Will Ackerman, Michael Hedges, Mark Isham, and Shadowfax. The stereo cassettes from Paramount Home Video cost \$29.95 in Beta Hi-Fi or VHS Hi-Fi or \$99.95 for all four, a special holiday gift price. The same programs are available with digital sound on Pioneer LaserDiscs at \$24.95 each.



On six videocassettes, the BBC's "The Story of the Symphony" won an award for best TV sound.

ALANNA NASH Contributing Editor

For Christmas, there are a few accessories for my Sony D-5 Discman that I would like to find in my stocking. One would be the holder and carrying strap that says "SONY" on it, which didn't come with the original D-5 (EPB-300, \$19.95). Other neat add-ons include a slightly better set of headphones (MDR-M53, \$59.95), a pair of Sony's powered minispeakers (SRS-50B, \$84.95), and a replacement cable for plugging the D-5 into my stereo system (RK-129, \$7). Since I'd like to have these things myself, I think they'd also make excellent gifts for other Discman owners.

MARK PEEL Contributing Editor

As someone who's used the same Discwasher for seven years, I'm

hardly in the position to recommend any record-care accessories. At Christmas, I like to give books. For rock and pop music fans, the new Dylan biography, *No Direction Home* by Robert Shelton (William Morrow, \$17.95), is a book of real scholarship and substance—a rarity in the rock book genre.

A more lurid but entertaining book is *Hammer of the Gods*, the Led Zeppelin biography by Stephen Davis (Ballantine, \$4.95)—a great stocking stuffer. For classical-music lovers on your gift list, you might try giving the *New Grove Dictionary of Music and Musicians*—not the full hardcover set, which lists for \$2,000, but the neat little New American Library paperback spin-offs devoted to a specific composer or school of music. Each book contains the actual entry from the complete dictionary, with facts, opinions, and scholarly commentary.

STEVE SIMELS Contributing Editor

CD or not CD, that is the question, and for me the answer is a resounding, "Gimme!" That being the case, all I want for Christmas is the CD version of Bob Dylan's "Biograph" anthology (Columbia C3K 38830) or the new Bruce Springsteen live set (Columbia C3K 40558). And if either of those is prohibitively expensive for those of you inclined to buy them for me, I will happily settle for the CD of the Replacements' "Let It Be" (TwinTone 8441 CD), which, as I've said before and will say again, is *the* American rock album of the decade so far.

MICHAEL SMOLEN Senior Editor

With prices plunging to the \$100 range, my first suggestion is that anyone who does not yet own a CD player go out and get one. Period. Once you have the player, the finest CD cleaner I have seen is Nagaoka's CD1100K Deluxe Compact Disc Cleaning System (\$19.95). Then, to carry around all your expensive discs, the perfect choice is Sony's CK-CD6 Compact Disc Carrying

Case (\$19.95), which holds a half-dozen CD's and is made of high-impact, heat-resistant plastic.

Of course, you'll need some discs to clean and put inside your carrying case, and my choices for discs of the year are Tangerine Dream's "Dream Sequence" (Virgin CDTD 1), Marillion's "Misplaced Childhood" (Capitol MLP-15023), and Pete Townshend's "White City: A Novel" (Atco 90473-2). My last Hannukah recommendation would have to be a good set of headphones for late-night CD listening, and my hands-down choice is AKG's K340 (\$195).

DAVID STEIN Assistant Managing Editor

Since I bought a CD player a little over a year ago, no addition to my growing collection of discs has given me more unflinching joy than the two discs of Bach-inspired piano improvisations by John Bayless: "Bach Meets the Beatles" (Pro Arte CDD 211) and "Happy Birthday Bach!" (Pro Arte CDD 210). These are the discs I reach for first to show off my player, and they'll make perfect gifts for friends who have players of their own. The music is pastiche, of course, but it's so elegantly done, so true to the spirit of its model, so slyly humorous, and such a triumphant recovery of a great tradition that I want to clap my hands with delight every time I listen.

Radio Shack cables (left) and high-end Monster Cable connectors.



PHOTOGRAPHS BY DAVID KELLEY

THE JUDDS

by Alanna Nash

"Our life—I mean, everybody calls it magical. Somebody said our story was better than a Judith Krantz novel."



RCA RECORDS

IN the popular-music industry, where careers and fortunes are made with the humdrum frequency of Egg McMuffins, the success of the Judds, a red-haired mother-and-daughter duo from the unhip town of Ashland, Kentucky, is still one for the books. In three years' time they have gone from singing around the kitchen table to becoming one of the top acts in country music, winning two Grammy awards and four Country Music Association awards, earning a full-page article in *Time* and coverage in *Life*, and collecting a host of other honors usually reserved for their more pop-oriented counterparts. This year they were nominated for five Country Music Association awards.

Their music has given staid, lifeless country radio a direct and well-positioned kick in the pants by introduc-

ing a fresh, new direction for progressive country fare. It has also afforded Naomi Judd a big diamond ring and daughter Wynonna a shiny new BMW. And in Ashland, Kentucky, where a woman's social scene revolves around Jane's Beauty Parlor on Thirteenth Street, things like this don't come down the pike every day.

"Our life—I mean, everybody calls it magical," says Naomi, thirty-nine, a Southern beauty in the Scarlett O'Hara mold. "Somebody said our story was better than a Judith Krantz novel."

"Actually," says Wynonna, twenty-two, probably the most significant new country female voice of the last twenty years, "our lives are a modern-day fairy tale. Especially," she adds, gesturing toward her mother on the couch in their manager's Nashville office, "this woman sitting here."

W Y N O N N A

If the unique success of the Judds is like something out of Hans Christian Andersen, it is a fairy tale of Naomi Judd's own design. Smart, ambitious, and persistent, Naomi is usually regarded as the less talented of the two, mostly because she is uncommonly beautiful and because her daughter has such a remarkably mature, expressive voice. Some critics, overlooking the symbiotic quality of Naomi's harmony vocals and her considerable songwriting talents, have unfairly appraised her as "window dressing" for the Judds' sound—an inventive collage of folk, country, bebop, jazz, early rock-and-roll, and ballad.

But Naomi Judd, with her daredevil spirit, her musical eclecticism, and her personal vision split between that of a California flower child and a Kentucky pioneer woman, is the one who defines the drive and the imagination behind the Judds' achievements.

"I know I'm weird," Naomi volunteered, biting into a large slice of pizza and shrugging her shoulders. "But all my life I've had some kind of missionary zeal. If I see something that needs to be done, and I know that my idea is going to work, it's always been real hard for me to demur."

THE daughter of a filling-station owner, Naomi Judd grew up with the given name of Diana. In her senior year of high school she married a boy named Michael Ciminella and dropped out of school when she became pregnant. The day the rest of her class graduated, she gave birth to a daughter, Christina. After another child, Ashley, arrived, the family moved to California in 1968.

On the West Coast, Diana found the Sixties counterculture more in tune with her adventurous personality. A divorce followed in 1970, as did a series of short-lived but glamorous jobs, including working "a couple of months" as a secretary to the Fifth Dimension and wangling a job on the set of George Lucas's *More American Graffiti*. Then it was back to Kentucky with the girls in 1975. By that time Diana Ciminella had changed her name legally to Naomi Judd, and Christina had been renamed Wynonna. "We're so proud to be from Kentucky, and it was almost as if 'Diana' and 'Christina' were California names," said Naomi. Wynonna nodded and agreed: "It was a new life."

Publicity for the duo's first RCA album two years ago leaned heavily on the fact that Naomi and Wynonna spent part of the mid-Seventies living on a mountaintop in the small, eastern Kentucky town of Morrill and that Naomi made her own lye soap. Both statements are true, and Naomi explains that it was all part of a trendy back-to-nature experiment ("I'm appalled by our lack of reverence for our Mother Earth.")

In Morrill, Wynonna discovered the guitar. And when Naomi and her daughters moved back to California (this time to the hot-tub country of Marin County), Wynonna begged to be allowed to stay home from school to practice guitar, listen to her Joni Mitchell and Bonnie Raitt records, and work out vocal harmonies with her mother. They were living, they told me, in a one-bedroom apartment over a real-estate office, Naomi and Ashley sleeping two-to-a-mattress on the floor. But Wynonna was "eaten up with music," and in 1977 they cut some demo sessions at a small studio. Naomi never gave up hope—or imagining a life of excitement and fulfillment—even when she couldn't pay the rent. "There is," she said, "a kind of pioneer spirit in me that's just relentless."

As we sat in their manager's office, Naomi and Wynonna told me the fairy tale of their life, which

seemed to be a series of moves back and forth across the country. It was after they moved to Nashville in 1979 that the man with the glass slipper came into the story. He was record producer Brent Maher.

His daughter, who heard Wynonna sing at high school, tried to tell Maher about this incredibly talented girl, but the timing wasn't right. Maher was busy. Naomi was working extra shifts as a nurse to make ends meet. She says Wynonna refused to consider college, boys, a career, or anything but music and just stayed home all day "watchin' soap operas, with dirty dishes under her bed that looked like science projects."

Then, in 1982, Maher's daughter was injured in an automobile accident, and Naomi Judd was assigned to care for her at a Nashville-area hospital. After the girl recovered, Naomi took a homemade tape over to Maher, and a month later he got around to listening to it.

Maher recalls that among the samples of bebop, bluegrass, and blues, "there was this Indian lullaby on it that Naomi had written, a story about a little squaw whose husband died, and they froze to death in the snow. It just tore your heart out—had this Indian chant that went through it: 'hi, hi, you, hi, yee, hee . . .'"

Naomi and Wynonna worked with Maher and guitarist Don Potter for six months before they put anything on tape. They defined their style, building the distinctive, country-jazz framework of their sound and creating the subtle interplay between Potter's acoustic lead guitar and the women's voices. They won their RCA contract with a live audition—something that's just about unthinkable with today's music-business politics. Wynonna said, "Things happened so fast, it was almost overwhelming."

Their first single, *Had a Dream (For the Heart)*, made the Top 20. The second and third singles, *Mama He's Crazy* and *Why Not Me*, went the distance to No. 1, and the die was cast, with *Have Mercy, Grandpa (Tell Me 'Bout the Good Old Days)*, and the title track from their third album, "Rockin' with the Rhythm," to follow.

In fairy tales, of course, people live happily ever after. There is talk in the industry that the Judds signed their RCA contract with the idea of planned obsolescence—that, eventually, Wynonna would break out on her own as a solo singer, and Naomi would make the easy transition to movies. Both the singers flatly deny any such thing. Wynonna insists, "I will always share our music with Mother. The foundation that has been laid is that of Mom's harmonies."

AS for Naomi, "I was never interested in acting," she says, "because my life was much more colorful, frankly, than anything I saw on the screen. Besides, I'm having too much fun." For Naomi, part of that fun comes from showing others that while she may have taken a circuitous route, she did pull off this crazy dream of hers—an unfocused dream, perhaps, but "one that proved what you're capable of, and just how far you can stretch your imagination."

Last year, when she went back to Ashland for Christmas, she stopped in at Jane's Beauty Parlor for her first-ever manicure. "All of a sudden, I've got this gorgeous diamond ring from our manager," she says, "and I'm sitting there in this little beauty shop, getting a manicure, and flashing this diamond ring. It was wonderful. Because I've never wanted to be anybody but Naomi Judd, from Ashland, Kentucky. "Then again," she adds, after a pause, "Naomi Judd from Ashland, Kentucky, always had one foot on the ground and her head in the clouds." □

A Special Test Report

CARVER'S AMAZING LOUDSPEAKER

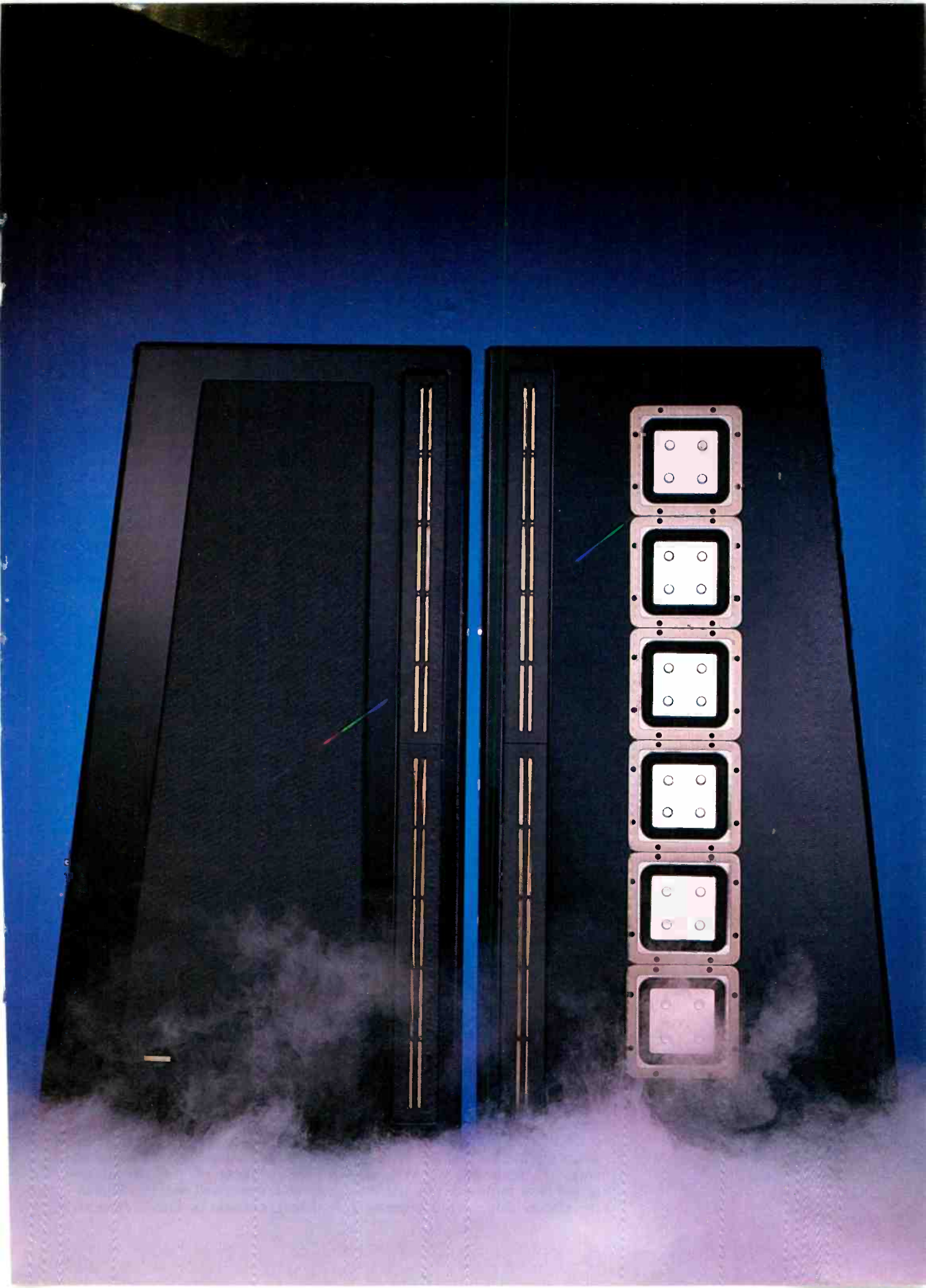
by *Julian Hirsch*

A PRODUCT with a name like "The Amazing Loudspeaker" would be difficult to take seriously if it came from anyone with a less distinguished track record than Bob Carver. It *does* come from him, however, and it *is* something to be taken seriously! Carver has long considered the unique sound quality of a planar loudspeaker to be unequaled, and rarely approached, by any form of enclosed speaker. The acoustic radiation from a large area produces a sonic image that seems to float in the air and usually cannot be localized to a specific point of origin. Planar speakers, with drivers on or in the form of a freestanding panel, are typically dipole radiators, emitting sound equally from their front and rear surfaces. The rear radiation bounces off the wall before reaching the listener, and the resulting directional scattering and time delay of a few milliseconds add additional airiness and a sense of space to the sound.

Planar radiators can be either electrostatic or electromagnetic in their operation. Carver based the Amazing Loudspeaker on a driver that he calls a "direct-drive large-area full-range ribbon." It is a type of magnetic driver whose "voice coil" consists of a long foil conductor suspended vertically in a magnetic field. "Direct drive" refers to the absence of any matching transformer to couple the very low impedance of the ribbon to the driving amplifier. Instead, a resistor connected in series with the ribbon is used to present an acceptable load to the amplifier (although it wastes some of the available power).

Adequate sensitivity is obtained by using a large number of magnets along the full 60-inch length of the dual ribbon, which is about 1/2 inch wide. The ribbon's considerable length and 30-square-inch area, as well as its placement in free air, enable it to dissipate the heat from large power inputs, unlike the fragile voice coil of a dynamic tweeter. Being vertical, it also has excellent horizontal dispersion. And the large area of the ribbon—effectively even larger than 30 square inches at low frequencies

PHOTO BY ROBERTO BROSAN



Despite being a one-piece planar speaker system, the Amazing Loudspeaker had to be able to generate the lowest bass frequencies. Using magnets only a third as powerful as in conventional woofers, Carver's "uniform drive planar subwoofer" extends bass response to 25 Hz.



because of its Kapton plastic-film support—gives it the ability to radiate very low frequencies with near-ideal phase characteristics. Space-age plastics such as Kapton have the physical qualities needed to support the ribbon conductors of the Amazing Loudspeaker, and they remain dimensionally stable at extremely high temperatures.

Although Carver's ribbon is a superb radiator for the middle and high frequencies, aided by the absence of a crossover network in this major part of the audible frequency range, it lacks the area and linear excursion range needed to generate high acoustic levels in the low-bass region. Carver's goal was to create a two-way speaker that could deliver large amounts of undistorted power to all audible frequencies without requiring unrealistic drive levels from the amplifier. Despite being a one-piece planar speaker system, the Amazing Loudspeaker had to be able to generate the lowest bass frequencies without the aid of an external subwoofer. Carver's solution is called the "uniform drive planar subwoofer system," which, by using magnets only one-third as powerful as those of conventional woofers, extends the bass response down to 25 Hz with only a minimum loss of efficiency.

DESPITE the novelties of the bass drivers, the ribbon radiator is the heart of the Amazing Loudspeaker. Operating from 100 Hz to far above audibility, it supplies most of the audible sound from the system. It consists of a pair of series-connected aluminum-foil ribbons bonded to a sheet of Kapton plastic film. Four rows of bar magnets mounted on the speaker's wooden frame extend along its entire length—on either side of the ribbon, in front of it, and behind it. The magnetic field of these magnets is parallel to the front of the speaker. Signal currents flowing in the ribbon cause it to move and to generate acoustic waves that radiate to the front and rear of the speaker.

The ribbon is surprisingly rugged, thanks to the strength of its Kapton base, and its resonance frequency of about 25 Hz allows it to radiate over almost the entire audio frequency range. To keep the ribbon's maximum excursion at safe levels, the system's crossover is set for a low-frequency limit of 100 Hz. With the crossover removed, we were surprised (and impressed) to find that the ribbon alone could generate a

solid deep bass, though only at background-music levels.

A CONCERT SLOPE switch on the back of the speaker inserts a small response dip in the vicinity of 3,000 Hz. This adjustment shifts the normal perspective of the sound stage so that the music appears to come from a point behind the speakers. With the switch off, the sound is slightly more forward and nearer to the plane of the speakers.

The Carver Amazing Loudspeaker, finished in a glossy black lacquer, measures 66 inches high and 34 inches wide at the base, tapering to 27 inches wide at the top. The ribbon driver is visible as a golden stripe near the inner edge of the speaker (the system is designed in mirror-image pairs). A dark gray cloth grille (not normally removable) covers the four woofers, which are aligned vertically and occupy most of the height of the panel. The rear of the woofer array is protected by a cloth-covered box. The speaker panel is supported on a low metal base that angles it backward a few degrees. Each speaker weighs about 150 pounds. Suggested retail price is \$1,536 a pair.

The Measurements

For our measurements, we positioned the two Carver Amazing Loudspeakers with their ribbon elements about 6 feet apart and their backs about 4½ feet in front of a room wall. Any speaker whose directional properties differ markedly from one using front-radiating cone drivers is difficult to measure because no single response curve is adequate to describe its performance in a meaningful way. Therefore, we were prepared to find the measured response of the Amazing Loudspeaker to be quite irregular, especially in quasi-anechoic FFT measurements, which respond to the sound arriving at the microphone along a specific line from the speaker.

Measured at a distance of 1 or 2 meters from the speaker, the FFT response revealed a strong bass, a dip at about 3,000 Hz, a broad maximum from 5,000 to 12,000 Hz, and a falling output from 12,000 Hz to beyond 20,000 Hz. There was evidence of comb-filtering, which showed up as a periodic fluctuation of output over the middle and upper frequency range. Further investigation, including close-miked measurements of the ribbon response, confirmed that this fluctuation was caused by interference be-

tween signal components arriving at slightly different times from different parts of the ribbon, an inevitable result with any line or planar radiator.

THE fluctuations averaged out in the room-response measurements, and when the room response was spliced to the close-miked woofer response, the composite curve was flat within ± 4 dB from 65 Hz to beyond 20,000 Hz. The low-frequency output increased smoothly below about 300 Hz and leveled off between 20 and 40 Hz at about 10 dB above the average midrange level. This composite response curve corresponded closely to the frequency balance that we heard from the speakers.

We measured the woofer response with the microphone close to one driver. The FFT response rose at 6 dB per octave from above 100 Hz down to its maximum at about 26 Hz, and it decreased at 12 dB per octave below that frequency. The initial rise exactly compensates for the normal low-frequency loss of a planar speaker, making the system's actual bass response flat down to the maximum point, 26 Hz, of the woofer-response curve, dropping off at 18 dB per octave below that point. Since our test speakers (including the drivers) were handmade prototypes, we measured the actual lower limit for each of the speaker's four woofers. The limit frequencies varied between 24.3 and 26.7 Hz, with the average being 26.4 Hz. The average response below 26.4 Hz dropped off to -3 dB at 21 Hz and -6 dB at 18 Hz.

The measured impedance of the Amazing Loudspeaker was relatively constant over the entire audio range. From a minimum of 4 ohms at 35 to 40 Hz, it rose to 12 ohms at 220 Hz, remained between 7 and 12 ohms from there to 5,000 Hz, and decreased to 4 ohms at 20,000 Hz. The average impedance was close to 8 ohms. The system's sensitivity was 82 dB sound-pressure level (SPL) at 1 meter with an input of 2.83 volts. Our bass distortion measurements are made at a drive level corresponding to a 90-dB SPL output, which in this case was 7.1 volts. We measured the distortion of each woofer individually, averaging the results at each frequency to account for possible variations among the drivers—which turned out to be remarkably alike in their distortion characteristics. The distortion was less than 1 percent from 100 Hz

AMAZING BASS



Bob Carver's solution to the problem of generating the lowest bass frequencies from a planar speaker system without the benefit of an external subwoofer is what he terms a "uniform drive planar subwoofer system." The inherent relationship of the low-frequency cutoff, the enclosure volume, and the efficiency of a sealed-box speaker system normally requires a trade-off between volume, efficiency, and cutoff frequency. Since efficiency varies with the cube of the cutoff frequency, the penalty in lost efficiency for even a modest extension of bass response is huge. To reduce a sealed speaker's lower limit from 40 to 25 Hz, for example, would require a fourfold reduction in efficiency (equivalent to a 6-dB loss of sensitivity) and therefore four times as much driving power to achieve the same acoustic output level.

It had always been thought that planar speakers suffer from a similar limitation—that in order to have a useful low-bass output, the radiating panel must be large (comparable to the wavelength of the lowest frequency to be radiated). Carver, however, realized that while the efficiency equations for a planar speaker resemble those for a box speaker, there is a vital difference. The box's volume is replaced by the ratio of the woofer's cone area to its suspension stiffness (which is a function of the driver design and not related to the size of the speaker panel), and the relationship between the low-frequency cutoff and the efficiency becomes linear instead of cubic. Therefore, the response of a planar speaker could be extended from 40 to 25 Hz with a loss of efficiency, and consequent power penalty, of only 60 percent (a 2-dB reduction in sensitivity) instead of the 400 percent efficiency loss in a box speaker.

This bonus in the equations was not the complete answer to the problem,

however. Carver intended the Amazing Loudspeaker to generate frequencies not only equal to but well below the usual limits of box speakers, to say nothing of other planar types. Although its panels are rather large for many listening rooms, if the system used conventional bass drivers having a Q of 0.7 (the measure of the damping of the drivers' resonance), the system's response would be down 3 dB at 100 Hz and fall at 6 dB per octave below that frequency. Carver's design solution to this problem was characteristically both ingenious and simple.

By making the woofers' Q much higher, 2.5 instead of 0.7, and by placing their resonance at the desired lower frequency limit of the system, bass response (including the contribution of the crossover inductor) could be made to rise at 6 dB per octave with decreasing frequency. When the woofers' response is combined with the falling panel response, the result is a flat system response down to the woofers' resonance frequency, with a sharp cutoff at 18 dB per octave below that point (which happens to provide a superlative rumble filter).

It is noteworthy that the necessary high woofer Q was obtained by using magnets only about one-third as powerful as those of conventional woofers! The economy of this approach is considerable, since each speaker panel uses four 12-inch woofers and the magnet is a major part of the cost of any dynamic driver. The flat, rigid, low-mass radiating surfaces of the woofers are driven by conventional cones and voice coils. Since the woofers' moving mass must be very low to obtain the desired efficiency, a low resonance frequency (about 25 Hz) was achieved by using a very compliant cone suspension, which also allows a large linear excursion (about 1½ inches).

The overall sonic effect of the Amazing Loudspeaker was remarkably three-dimensional, with a very wide sound stage. Moreover, these were probably the most unstrained speakers we have ever used, with a seemingly limitless capacity to absorb electrical power and deliver clean audio output.

down to 50 Hz, rising to 1.73 percent at 40 Hz, 4.6 percent at 30 Hz, and 9 percent at 25 Hz.

The power-handling ability of the Amazing Loudspeaker was as impressive as its frequency response. At 100 Hz the woofers' output waveform remained an excellent sine wave until the input was raised to 555 watts, where it showed a slight sign of "rounding" from second-harmonic distortion. The output began changing to a straight-sided triangular waveform, representing third-harmonic distortion, at higher inputs, although the drivers never reached the endpoints of their linear excursions. The amplifier finally clipped at 960 watts. At higher frequencies, the amplifier clipped before the ribbon output showed any signs of distortion. The maximum inputs were 875 watts at 1,000 Hz (into 7.9 ohms) and 1,350 watts at 10,000 Hz (4.7 ohms).

Listening

In our listening tests, the Carver Amazing Loudspeaker had the essential spatial properties of a true planar speaker. The sound intensity hardly changed at all throughout the listening room, even when we stood quite close to the speakers themselves. The wall behind the two speakers became part of the sound stage, with the apparent sources distributed across and behind it as well as in front. The overall effect was remarkably three-dimensional. Moreover, these were probably the most unstrained speakers we have ever used, with a seemingly limitless capacity to absorb electrical power and deliver clean audio output. It would be safe to say that no home amplifier will tax the capabilities of the Amazing Loudspeaker.

THE sonic balance of the speakers was somewhat warm, with a noticeable bass emphasis. In the ribbon's middle- to high-frequency range, the sound was audibly smooth, well dispersed, extended, and effortless. Since the bass emphasis was largely below 100 Hz, it added little boominess to voices, although some of this effect could be heard. When the program contained really deep bass (under 50 Hz), the speakers began to show their unique qualities. Even at the lowest listening volume, we could *feel* their bass output, and at the highest levels it became positively tactile. The Amazing Loudspeaker is one of the very few speakers whose frequency response can hon-

estly be said to extend from below 20 Hz to above 20,000 Hz.

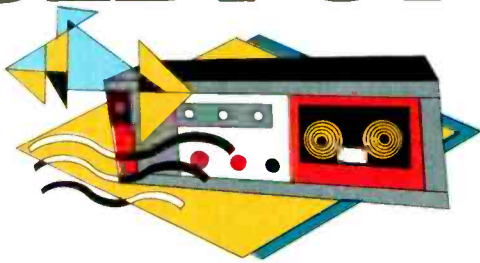
THE perspective adjustment afforded by the CONCERT SLOPE switch was quite subtle. We often had difficulty hearing its effect with music, although the frequency-response change was plainly audible with random-noise inputs. Whichever way the switch was set, there was a striking stability of the sound stage and of the imaging within it.

An unusually large sound stage is a clear advantage of a dipole radiator, and the Carver speakers possess a very wide one. For example, we heard the cannon shots on the Telarc CD of the *1812 Overture* coming from three distinct directions (left, center, and right), whereas with other speakers they all appeared to originate fairly close to the middle of the stage. As might be expected from their bass response, the speakers deliver an enormous impact from recorded cannon and bass-drum sounds, especially if the amplifier can deliver a few hundred watts per channel (at least 100 watts per channel is recommended).

It must be emphasized that the samples of the Amazing Loudspeaker that we tested were handmade prototypes and thus not necessarily fully representative of future production models. Judging from our tests and past experience, however, we would expect production models to be substantially improved, both cosmetically and in their listening performance. For one thing, Carver plans to reduce the original bass emphasis (which was established when the speakers were in a much larger room and could be placed further from the side walls) by changing the balance between the ribbon driver and the woofers. This should also increase the system's sensitivity by about 2 dB.

As with other Carver products, the nomenclature of these speakers is unconventional, but they do deliver the special performance that is claimed for them—and they offer unusual value for the money. We must admit that "amazing" does not seem entirely out of place applied to the Carver loudspeaker. Its overall sound is spectacular, its bass performance surpasses that of almost any other speaker one might name, its stereo imaging is outstanding, it appears to be indestructible by excessive power input, and its price is ridiculously low for what it does and considering what comparable products cost. □

THE DOLBY SYSTEMS



If you have ever used a cassette deck, you have encountered the little "double D" symbol telling you that the deck contains circuitry licensed by Dolby Laboratories. Chances are you don't think much about that symbol or the button that goes with it. Like most people, you probably push the "Dolby" button in whenever you make or play back your own recordings. Tapes from elsewhere, whether commercially duplicated or recorded by friends, are subjected to a quick listening test with the button in each position and then played back whichever way sounds best. What you *should* be doing is a bit more complicated than that, as we will see.

The word "Dolby," as most of us use it, refers to a circuit known officially as *Dolby B*, which is only one out of many designed and licensed by Dolby Labs. *Dolby B* is a simplified version of a professional noise-reduction system called, logically enough, *Dolby A*. *Dolby A* came on the market in 1966; the *Dolby B* version first appeared in a consumer open-reel tape deck in 1968 and in a cassette deck in 1970.

All of the company's products are named after Ray Dolby, its founder and chief designer. In addition to *Dolby A* and *B* it includes (in chronological order): *Dolby FM*, a combination of *Dolby B* noise reduction and modified equalization for improved FM broadcasting (1974); *Dolby Stereo*, a cinema sound system using matrixing to combine four channels of sound—left, center, right, and surround—with noise reduction into two optical film soundtracks (1975); *70mm Dolby Stereo*, which uses four discrete magnetic soundtracks on wider film stock for a higher quality version of *Dolby Stereo* (1979); *Dolby HX Pro*, a circuit for increasing the high-frequency headroom of cassette decks (1980); *Dolby C*, an advanced noise-

The first cassette deck with *Dolby B* noise reduction went on the market in 1970, and the rest is history. But do you know how to get the most out of the *Dolby* circuits in your equipment?

BY E. BRAD MEYER

reduction system for high-quality cassette recorders (1981); the *Dolby Digital Audio System*, a digital encoding system for broadcast relays (1984); and now, coming full circle back to the purpose of the original *Dolby A* circuit, there is *Dolby SR*, a noise-reduction and signal-conditioning system for two-track professional analog tape decks.

As an audio hobbyist, however, you will encounter the professional products only as they affect your choice of listening material. And another of the products, *Dolby FM*, is rarely used, at least among FM stations that try to put out a clean, unprocessed signal for classical music broadcasting. That leaves *Dolby B*, *Dolby C*, and *HX Pro*, the three circuits designed for home cassette decks, and *Dolby Stereo*, now available for home video software.

Dolby Stereo

Virtually all films now being made with stereo sound use *Dolby Stereo* encoding. Reissues on videotape or videodisc also contain center- and surround-channel information, which can be extracted with the aid of a decoder and fed to additional speakers to duplicate the multichannel effects you experience in the theater. How best to do this is a subject that deserves its own article, so we won't go into it here. Instead we'll concentrate on *Dolby* in home cassette decks.

Dolby HX Pro

Dolby HX Pro is becoming increasingly popular among manufacturers of high-quality cassette

decks—and rightly so. *HX Pro* works entirely in the record process, so tapes made with it exhibit improved response on *any* playback machine. The circuit is internally adjusted to the particular recorder, and no action need be taken by the operator. The only real advice you need concerning *HX Pro* is to buy a deck with it if you can afford one.

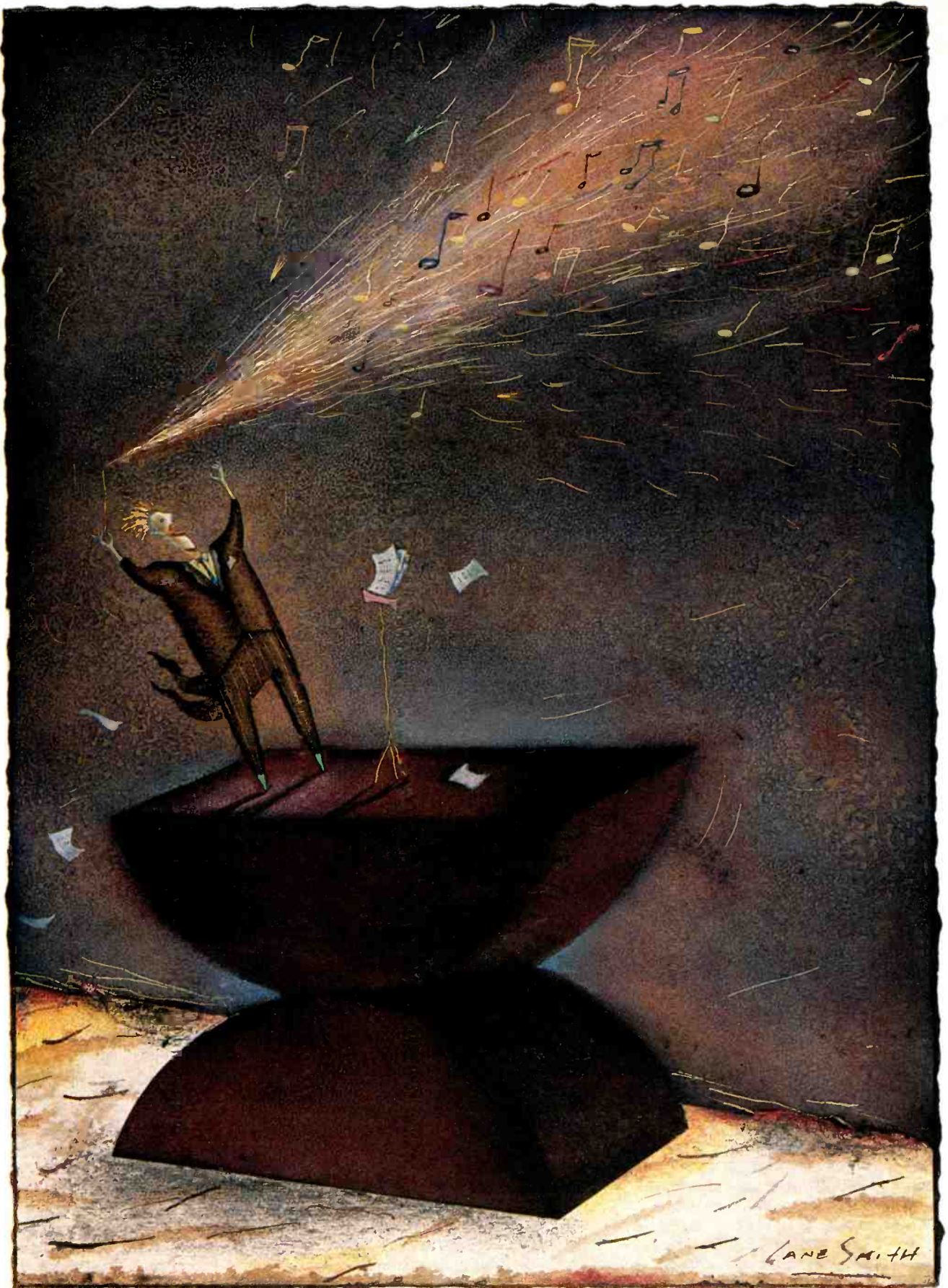
All tape recorders use a high-frequency signal, known as *bias*, that is mixed with the audio signal in the record head to minimize distortion. Adding this bias in just the right amount is important. If there is too little bias the distortion increases rapidly, while too much causes attenuation of the treble frequencies.

Cassette tape is limited in the level of high frequencies it can record partly because the high frequencies in the music act as an additional bias signal, in effect overbiasing the machine and reducing its treble response. The *HX Pro* circuit monitors the high-frequency content of the audio signal and rapidly adjusts the level of the applied bias to compensate. The result is an increase in high-frequency headroom that gives ordinary Type II (chrome or chrome-equivalent) tape almost as much headroom as the far more expensive pure-metal (Type IV) formulations.

Dolby Noise Reduction

Both *Dolby B* and *Dolby C* are complementary processes, which means that the audio signal is processed, or encoded, prior to recording, and then the reverse of that processing—decoding—is applied during playback. Their function, of course, is to reduce the noise (mostly high-frequency hiss) that would otherwise be added during the record-playback process, *not* to reduce noise that may already be present in the original program source.

All tape recorders use some form of equalization. To fight the effects



of noise, high frequencies are boosted during recording and attenuated during playback. It's as if a treble control in the circuit were turned up in record mode and then back down in play. The amount of this treble boost is limited by the high-frequency headroom of the tape.

The key to the Dolby systems' operation is that the upper limit makes its presence felt only when the music gets loud. At lower volume levels we could get away with a good deal more treble boost if that extra boost were instantaneously cut back during loud passages, which is just what Dolby B does during recording. As the signal levels fall, both the amount and the frequency range of the boost increase, until it reaches 8 to 10 dB from 2,000 Hz on up.

The Dolby B treble boost is moderate enough that tapes recorded, or *encoded*, with Dolby B are listenable, if bright sounding, played back without the complementary *decoding*. But on a deck equipped with Dolby B, the system reduces the low-level highs in playback by a complementary amount, once again leaving high-level signals alone. The process simultaneously restores a normal frequency balance to the sound and reduces the noise. When the music is soft, Dolby B gives an improvement of up to 10 dB in noise level at the higher frequencies, where tape noise is most bothersome. When the music is loud, the music itself covers, or *masks*, the low-level noise.

Dolby C is an extension of the Dolby B principle. Instead of 10 dB of boost from 2,000 to 20,000 Hz, the C-type circuit boosts the signal 20 dB between about 1,000 and 10,000 Hz. (Beyond 10 kHz the boost is rolled off to reduce high-frequency saturation and improve tracking accuracy.) Subjectively speaking, in many listening situations Dolby B reduces tape noise markedly while Dolby C eliminates it altogether. As a result, however, tapes encoded with Dolby C are *not* listenable on non-Dolby-equipped home decks. They can be played back with Dolby B decoding, but the results are less than optimal.

Now, the above scenario describes what happens when the tape recorder's circuits are adjusted perfectly for the tape you're using. "Perfectly adjusted" means two things: First, the bias must be correct to give flat frequency response; if it isn't, the Dolby circuits will increase any high-frequency re-

sponse error at certain audio signal levels—levels that, unfortunately, predominate in classical music. Second, the record and playback gain-trim controls (the former sometimes appears on the front panel labeled REC CAL) must be adjusted to match the signal levels in the encoding and decoding halves of the Dolby circuit. As with the bias, if this adjustment isn't done properly, frequency-response errors can easily result.

How to Use Dolby B and C

Now we can get to the heart of the matter: how to get the best out of Dolby noise reduction, both in making tapes on your own recorder and in playing tapes from other machines. (We are assuming that your deck has genuine Dolby circuits inside it and the double-D symbol on its front panel, which is your guarantee that this model has passed Dolby's factory tests for frequency response, noise level, and overall design quality.)

For tapes you record yourself, you should use the most powerful noise reduction available on your machine—Dolby C if you have it, Dolby B if you don't. *Exceptions:* 1) If the tape is for someone else, match your selection to the other machine's capabilities. But beware—not every cassette deck has the same record and playback equalization, so before you use Dolby C, which is very sensitive to these differences, check the machines for compatibility; if you're not sure, stick with Dolby B. 2) Tapes to be played in a car or portable deck with no Dolby circuits can be recorded with Dolby B if it improves their audibility at low levels; since car noise is mostly low frequencies, you will need to turn down the treble control when you play these tapes.

Calibrating your deck is vital if you are to realize the benefits of either system, especially Dolby C, which at some recorded levels can nearly triple frequency-response errors. Be sure to use tapes on the manufacturer's recommended list, as some machines are designed for the newest formulations and won't calibrate properly with older (and cheaper) cassettes. With good tape and a correctly adjusted machine, there will be no error to begin with, and hence no problem—zero times anything is still zero.

For decks with automatic calibration circuits, follow the manufacturer's instructions and set up the recorder with each new cassette.

Some very inexpensive decks may have only a single two-position switch for tape type; in that case you must use the exact formulation within each type that is recommended by the deck's manufacturer. And that's why a deck with Dolby C should have some kind of bias adjustment, whether manual or automatic.

If your deck has adjustable bias and Dolby record-calibration controls, turn all Dolby circuits off and record a broadband source such as choral music or noise at a level of -20 dB on the deck's meters. (One of the best sources of broadband noise is an FM tuner with the interstation muting off and the antenna detached. Hard rock—the more relentless the better—will also work.) With a three-head deck, switch the monitor button between the RECORD and TAPE positions and adjust the bias until the two sounds are as close as possible. With a two-head deck, record the source for half a minute or so, then rewind and play the tape, switching between SOURCE and TAPE on your preamplifier for comparison. Adjust the bias between tests until the two sounds are as close as you can get them.

How to calibrate the level controls varies from one deck to another. Automated decks will perform this operation as part of their built-in routine, while some others with manual Dolby level controls will give you specific instructions and perhaps even generate their own test signals. The most reliable tools for this job are a Dolby level tape or another professionally made calibration cassette and a shop manual for your machine. For those without test equipment, there is a simpler method that works fairly well with the same kind of test signal you used to adjust the bias. As before, you compare the source and playback, this time switching the Dolby circuits in and out (use the more level-sensitive Dolby C for this test if possible) and adjusting the REC CAL controls to achieve the smallest change in frequency balance with and without noise reduction.

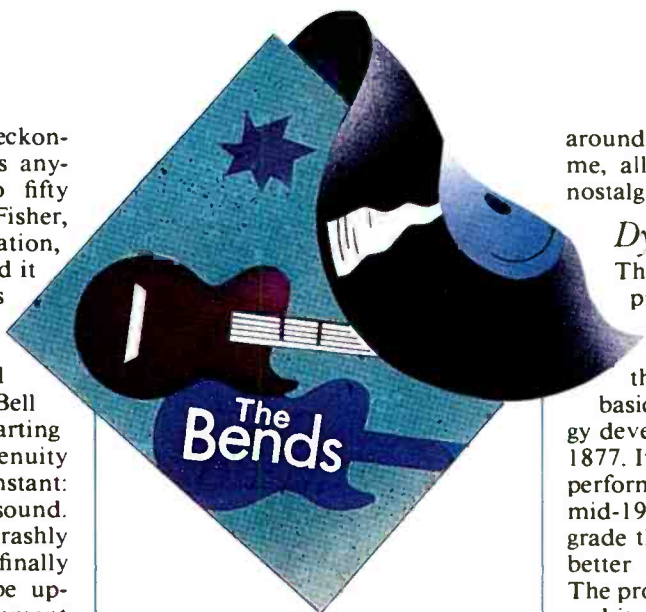
One final caution if you're using music for the level-matching test: The material you choose should have sufficiently loud and constant high frequencies that even at -20 dB the difference in background noise with the Dolby circuits switched in is masked. If you can hear the difference when the button is pushed, try to find another source. □

AUDIO'S NEAR MISSES

DEPENDING on whose reckoning you accept, hi-fi is anywhere from thirty to fifty years old. Avery Fisher, founder of Fisher Corporation, used to claim that he invented it in 1937, and his case is as good as anyone's, although his work was based on developments that stretched back to Alexander Graham Bell (1847-1922). Whatever the starting date, the aim of audio ingenuity over the years has been constant: the perfect reproduction of sound. Manufacturers have often rashly claimed that they had finally reached that goal, only to be upstaged by some new development that advanced the state of the art a step further.

While it may seem in retrospect that audio technology has traveled a fairly straight path from the primitive early days to today's sophisticated digitally based systems, there were, in fact, a lot of wrong turns and dead ends along the way. Anyone who has been serious about audio for any length of time probably has a few relics of such abortive developments in the attic, if they're not still in the family system.

Most of these died ignominious deaths in the marketplace, although a few did lead to mainstream technical advances and so are still



Well, it seemed
like a good idea
at the time . . .

BY IAN G. MASTERS

around in one form or another. For me, all of them evoke feelings of nostalgia.

Dynagroove

The phonograph record has probably been tinkered with more than anything else in audio—understandably, as the humble conventional disc basically uses the same technology developed by Thomas Edison in 1877. It's remarkable, in fact, that it performs as well as it does. In the mid-1960's, RCA attempted to upgrade the LP disc to make it sound better on modest record players. The process was called Dynagroove, and it consisted of a form of equalization that varied with the distance from the center of the disc so as to compensate for the problems inherent in the inner grooves. It was an interesting attempt, but it had the unfortunate side effect of making the records sound dreadful on *high*-quality systems without substantially improving performance on lesser players. RCA dropped the technique quickly, although the name continued to be applied to the company's discs for some time afterwards.

Skinny LP's

Another RCA innovation appeared about ten years ago, in the

wake of the oil crunch, when polyvinyl chloride was increasingly expensive and hard to obtain. The company discovered that it could reduce the amount of vinyl in a disc by almost half without affecting its ability to contain full-depth grooves. RCA even claimed that the new thinner, more flexible records would be less likely to hold warps than the older, fatter discs.

Whatever economies RCA may have realized with such records, they were roundly condemned by the audiophile community. For one thing, they proved to be *more* susceptible to warps than other discs. For another, their flimsiness caused them both to conform to irregularities on turntable surfaces and to droop when used on the record changers that were popular at the time. Their lightness also made them tend to pick up airborne sounds, acting like the diaphragm of a microphone.

The worst feature of these records, however, was caused by the necessity to make them conform to physical standards set by the Recording Industries Association of America (RIAA), which specified that all discs be a certain thickness at the edge and in the label area. To meet these specs and still save vinyl in the playing area, the record makers had to build in a sort of inward slope that took up most of the first piece of music. Many tonearms, particularly those with light tracking forces, simply skied down this slope to the level part of the disc, with a horrifying noise and potential damage to both stylus and record.

The skinny disc in its most extreme form didn't last long. Unfortunately, except in the case of some specialty records, the industry never did return to the weight used before the vinyl crisis.

Audiophile Recordings

The demands of mass production and the fashion for elaborate multi-track recording techniques resulted in LP's that rarely lived up to the medium's potential. Several specialty companies, mainly small ones, set out to correct this by producing no-compromise records for a discriminating market that didn't mind paying a premium to obtain first-class source material. The granddaddy of these companies was Sheffield Records, under Doug Sax and Lincoln Mayorga, which intro-



duced (or, rather, *re-introduced*) direct-to-disc recording to avoid the sorts of noise and distortion normally caused by mastering on tape. Other outfits experimented with digital recording, half-speed mastering, improved vinyl, 45-rpm albums, coincident microphone placement, and a host of other techniques to improve the sound of records.

Eventually even the major record companies joined in—a tacit admission that they had been cutting corners with their normal product. Ultimately, the specialty audiophile recordings had the desired effect: once consumers realized how good LP's *could* sound, they came to expect it, and the majors began to upgrade their releases, primarily by moving more and more into digital mastering. Audiophile recordings are still with us, but their necessity diminishes all the time as the compact disc makes the physical improvements pioneered by the audiophile companies irrelevant.

Extended-Play Records

In the late 1940's, it was obvious that the 78-rpm disc was woefully inadequate—it was noisy, it broke easily, and it offered a very short playing time per side. The two largest record companies, Columbia and RCA, tackled the problem and, as might be expected, came up with different solutions.

Columbia developed a disc made of quiet, relatively unbreakable vinyl, 10 or 12 inches in diameter. It

used a much finer groove than the 78, allowing more material to be packed into a given amount of surface area, and it revolved at 33 $\frac{1}{3}$ rpm, which further increased the amount of recorded material the disc could hold. The combination of a smaller groove and a slower speed meant that the earliest versions could get about 20 minutes on one side of a 12-inch disc, which Columbia therefore dubbed the Long-Playing record, or LP.

RCA also opted for vinyl and the "microgroove" but chose not to tamper with the basic unit of the record business, the "single." Consumers were accustomed to buying music one song at a time (two, actually, if you count the flip side), and there was no particular reason to believe that they would change their habits overnight just because the technology to put more music on a disc existed. The RCA answer was the 7-inch 45-rpm record, which boasted similar sound characteristics (at first, anyway) but was much smaller and cheaper than the LP. And, like the 78, it held only one song per side.

Eventually, it became obvious that the two formats could co-exist. The singles market, which remained dominant for about a quarter of a century after the introduction of the LP, was best served by RCA's 45; collections and classical music were more suited to the 12-inch LP (the 10-inch version disappeared early in the 1950's).

But RCA didn't give up the fight easily. Adapting the LP technique of the variable-pitch groove to 45's, the company came up with the Extended-Play record, or EP, which managed to fit *two* songs on each side of the disc. EP's enjoyed a brief popularity here in the late 1950's (and somewhat longer in Europe). Ultimately, however, it became clear that an intermediate format between single and LP fulfilled no real market need, and so the 7-inch, 45-rpm EP quietly disappeared.

The 162 $\frac{1}{3}$ -rpm Record

An even rarer sort of record also appeared in the 1950's. Presumably on the theory that the slower the rotation speed, the better a record's sound, which was empirically true but had little to do with the speed itself, several companies announced they would release discs that could carry *twice* as much material as an LP by revolving half as fast. Turnta-

ble manufacturers quickly responded by offering the new speed on their equipment, but the record companies soon realized that the new format couldn't deliver. If there was an irreducible minimum speed for acceptable quality, the 16 $\frac{2}{3}$ -rpm record was beneath it.

Such discs were used for spoken-word recordings—talking books for the blind—for many years, until this function was largely taken over by the cassette. The speed itself continued to be offered on a few turntables into the early 1970's, occasioning many queries as to what on earth it could be for.

Record Changers

Changers had been very popular in pre-LP days as a way to obtain relatively long playing times, particularly with classical recordings. When the 33 $\frac{1}{3}$ -rpm record took over, turntable manufacturers in Europe and North America added the new speed and refined their products, but they continued to make mostly changers. Single-play turntables were popular with high-end audiophiles, and there was a belief that they were gentler on records, but most consumers on both sides of the Atlantic continued to prefer changers. Consequently, the companies that made them—Garrard, Dual, Miracord, and so on—dominated the U.S. and European turntable markets.

The situation was markedly different in Japan. Perhaps in emulation of American high-end preferences, no Japanese audiophile would be caught dead with a changer, so Japanese audio companies did not make them. In the 1970's, the major Japanese manufacturers began a massive marketing push overseas to complement their already dominant position in electronics with similar success in other audio areas. A combination of high-level engineering and attractive pricing achieved this goal, and Japanese turntables soon began to take over the market here.

In an astonishingly short time, Americans abandoned the changer. The traditional leaders in turntable sales, the changer makers, were slow to follow the trend (some never



did), and they were quickly supplanted by the Japanese manufacturers. Those that managed to survive did switch to single-play units, but too late to regain their former positions. Now, such changers as continue to be made are relegated to the extreme low end of the market.

Articulated Tonearms

An analog disc is mastered using a cutting stylus whose lateral axis is always perpendicular to the groove walls, but it is usually played back by a stylus that is at the end of a long, pivoted arm. The result is that the orientation of the playback stylus can only be exactly the same as that of the recording stylus at one or two points on the record surface. In more primitive times, this didn't matter very much, but as recording technology developed over the years, the relationship of stylus to groove became more and more critical (although there is still some argument as to how audible these angular discrepancies are).

The problem is lessened by using very long arms, but these are not usually practical. The same effect can be simulated, however, by putting a bend in the arm, either by offsetting the headshell or by making the arm itself S- or J-shaped, and one or the other of these techniques is virtually standard in modern pivoted arms. But over the years, a number of audio designers have sought to devise ways of reducing the angular error even further.

One valiant effort was introduced by Garrard in the early 1970's, as the main feature of its Zero 100 turntable series. This British com-

pany developed a system in which the tonearm's headshell was pivoted in the horizontal plane and a separate linkage, parallel to the tonearm shaft, constantly changed its offset angle. As the device swung out over the record surface, the lateral axis of the stylus was kept parallel to the fixed mount. By placing the mount at just the right spot, the stylus could be made to approximate closely the orientation of the original cutting stylus.

The Zero 100 system *did* work, but it was less than a commercial success and was eventually

abandoned. To some extent it failed because few buyers were convinced that the audible improvement was great enough to warrant the expense. Also, audiophiles were becoming more aware of the importance of tonearm mass, and Garrard's complicated arm system had roughly double the metal (stainless-steel) of a conventional arm.

In the end, the articulated arm probably died mainly because better ways to do the same thing came along, notably the true straight-line arm. Linear-tracking arms also continued to improve, after a rather Rube Goldbergish beginning, and most audio designers concluded that linear tracking was the way to solve the problem of horizontal-tracking-angle error if it were to be solved at all.

Wire Recording

For almost as long as there have been recordings, people have wanted to make their own. A natural medium was the disc (or, earlier, the cylinder), because that was what most people were familiar with, and a number of home disc recorders came on the market over the years. But they were definitely less than ideal. Such devices worked either by brute force, carving a groove into a hard surface, or by employing very soft discs. The first type was distinguished by very low fidelity, the second by extremely fragile records that couldn't survive more than a few playings. And neither could be recorded more than once.

A different solution, which was tried even before the beginning of this century, was magnetic record-

ing on a moving steel wire. The principle was a good one, but the magnetic nonlinearities of the wire and the difficulty of controlling its physical motion relegated the wire recorder to the "curiosity" class, at least as a commercial product. The basic theory didn't die, however. When the steel wire was replaced with a ribbon coated with ferric oxide (rust) and the nonlinearities smoothed out by the addition of an AC bias signal, magnetic tape recording finally came into its own.

Tape Cartridges

Open-reel tape's major drawback was that it was a drag to use. Professionals and the more dedicated amateurs might put up with the awkwardness of threading tapes, but most average consumers couldn't be bothered. So tape was destined to be the preserve of the few unless some way could be found to simplify its handling. Many companies applied themselves to this problem, and a lot of ingenious devices appeared—briefly. Most housed the tape in some sort of cartridge that could just be shoved into a slot.

In North America, the version that appeared to be destined for success was the four-track cartridge, adapted from the broadcast "carts" that are still standard equipment in radio stations today. Four-track cartridges held an endless loop of 1/4-inch tape that contained two pairs of stereo tracks conforming to the basic configuration used in consumer open-reel machines of the day, except that they were recorded in one direction rather than two. When one set of tracks was through, the machine automatically switched to the second, resulting in more-or-less continuous play. The four-track cartridge used standard tape recorded at 3 3/4 ips, which was then considered about the slowest speed that would offer reasonably good sound quality.

The four-track, as it turned out, was only a temporary solution. It soon vanished, to be replaced by an improved version called the eight-track cartridge. This also used standard tape and played at 3 3/4 ips, but by making the tracks half as wide, twice as much material could be

recorded on the limited amount of tape that could be contained inside the cartridge shell, with only a slight compromise in sound quality. In addition, the tape was held in contact with the capstan by a pressure roller built into the cartridge (with the four-track, the pressure roller was part of the machine and had to swing into place when the cartridge was inserted), making for simpler and cheaper construction.

Both four-track and eight-track cartridges provided ease of operation, but they had their drawbacks. For one thing, they were difficult for consumers to record on because they were endless loops—unless you were very careful, either you ended up with several minutes of blank tape at the end of a recording or else the end overlapped the beginning. If you made a mistake while recording, you had to let the tape wind through to the end/beginning either at playing speed or at a very slow fast-forward before starting over.

Also, the method of winding the tape in a loop made tangles very common and speed irregularities—wow and flutter—a constant problem. The *main* complaint about cartridges, however, was that they were designed to provide minimal performance at a time when tape technology was still fairly primitive, and they never improved. The sort of engineering ingenuity that was applied to other areas of audio missed the eight-track cartridge, which technically is hardly better now than when it was introduced twenty years ago. And yet it does survive today, although its popularity has

shrunk almost to the vanishing point.

The Elcaset

The main rival to the eight-track cartridge, although more popular at first in Europe and Japan than in North America, was the Musicassette developed by Philips. This had the advantage of being small and relatively uncomplicated, but it was never designed to be a hi-fi medium. Rather, its original virtues were convenience and portability. Nevertheless, as the cassette became more popular, a great deal of engineering effort went into

making it a suitable medium for music, and over the years it underwent a dramatic improvement. But it was still not considered capable of *true* high-fidelity sound until very recently.

In the mid-1970's, therefore, a new format was tentatively introduced by several Japanese companies. Like the cassette, it came in a plastic shell that contained two reels, and it shared the exotic new tape formulations, mechanical improvements, and electronic wizardry that had become common in cassette equipment. But it used 1/4-inch tape, allowing for wider tracks, and ran at a higher speed. The Elcaset, as it was called, was designed to offer both the performance of open-reel tape and the convenience of the cassette. Only one company (Sony) actually took this format beyond the prototype stage, and a competing European equivalent called the Unisette never even got that far.

Both these formats failed because they purported to solve problems that most consumers didn't feel existed. The improvement over the standard cassette was minimal, as it turned out, in spite of the considerable cost difference. The lack of compatibility with the millions of cassettes already on the market was another stumbling block. And, in the end, it appeared that the markets for "quality" and "convenience" were quite separate, and the Elcaset satisfied neither.

Dolby FM

A major advance in the art of recording was Dr. Ray Dolby's noise-reduction system for consum-



er tape equipment. It seemed reasonable, therefore, to apply the same technology to FM stereo, which can also be a rather noisy audio medium. To do so, however, it would be necessary to persuade a majority of broadcasters to install encoding equipment and to sell to consumers either outboard decoders or new, Dolby-equipped tuners. In fact, quite a few FM stations *did* convert, and for a time many cassette-deck manufacturers provided circuitry that allowed their units to double as outboard decoders.

Even so, the problems of Dolby FM were insurmountable. In the first place, for the decoding circuitry to work properly, it had to be adjusted very closely to the levels encoded by the stations, and this meant that the stations had to broadcast a calibration tone every so often. Few were willing to do so regularly enough to be useful. Second, the Dolby-encoded signal had to be reasonably compatible with a "straight" signal so that ordinary tuners and receivers would still receive something approximating balanced sound. Because Dolby encoding has the effect of boosting the high frequencies, the pre-emphasis used by the FM station had to be altered so that a Dolby-encoded signal would sound reasonable on an ordinary tuner. To get full benefit of the noise reduction, a tuner equipped with a decoder would also vary the de-emphasis. The result was that listeners not only had to switch in the Dolby circuitry and match levels with the station, but they also had to change equalization. Few could be bothered.

In any event, most FM listeners tune into strong local stations that are quiet enough anyway, and for them there was simply no benefit in Dolby FM.

Super Receivers

Receiver manufacturers in the 1970's went through a sort of wattage war in which ever-more-powerful units were offered (at appropriately higher prices). The height of this, as I recall, was the Pioneer SX-1980, which boasted a massive 270 watts per channel (into 8 ohms).

Whatever their motivation, the manufacturers were on to a technically valid thing. High-powered amplifiers have always been an important part of audio. Within reason, the more power you have at your disposal, the better. It is far easier to

damage a pair of speakers with too little power than too much, and the ability of a high-powered unit to handle musical peaks is a major contributor to good sound. But it turned out that buyers who were concerned about such things were more likely to purchase separate power amplifiers rather than receivers; receiver buyers were more interested in value than brute force. For better or for worse, the super receiver disappeared as fast as it had appeared.

Motional Feedback

Over the years, there have been repeated efforts to extend the normal operating frequency range of loudspeakers. In the early years of hi-fi, for example, a popular item was an add-on tweeter intended to assist certain speakers that were somewhat weak in the high end. It was irrelevant that such devices were rarely well matched to the speakers they were intended to complement—thousands were sold in the belief that they improved matters.

More common, however, have been techniques to extend a speaker's range at the *other* end of the spectrum: to produce more bass. One of the most elegant techniques for flattening out a speaker's response curve, particularly at the low end, was the motional-feedback speaker, which enjoyed a brief moment of fashionability some years back. Essentially, the woofer incorporated a sensing device that detected actual cone movement, which was electronically compared with the *intended* cone movement (that is, the original audio signal), and the signal to the woofer was then altered to make the speaker conform. Motional feedback not only flattened out the curve within the speaker's range but by doing so increased the low-frequency energy in its output.

Two things put an end to this sort of technique. First, it was expensive and unfamiliar to all but the most technically literate. Second, there were dramatic improvements in conventional speaker designs, making technical niceties like motional feedback, however ingenious, unnecessary.

Four-Channel Sound

Four-channel sound is everybody's favorite example of a massive audio foulup. And yet, it was

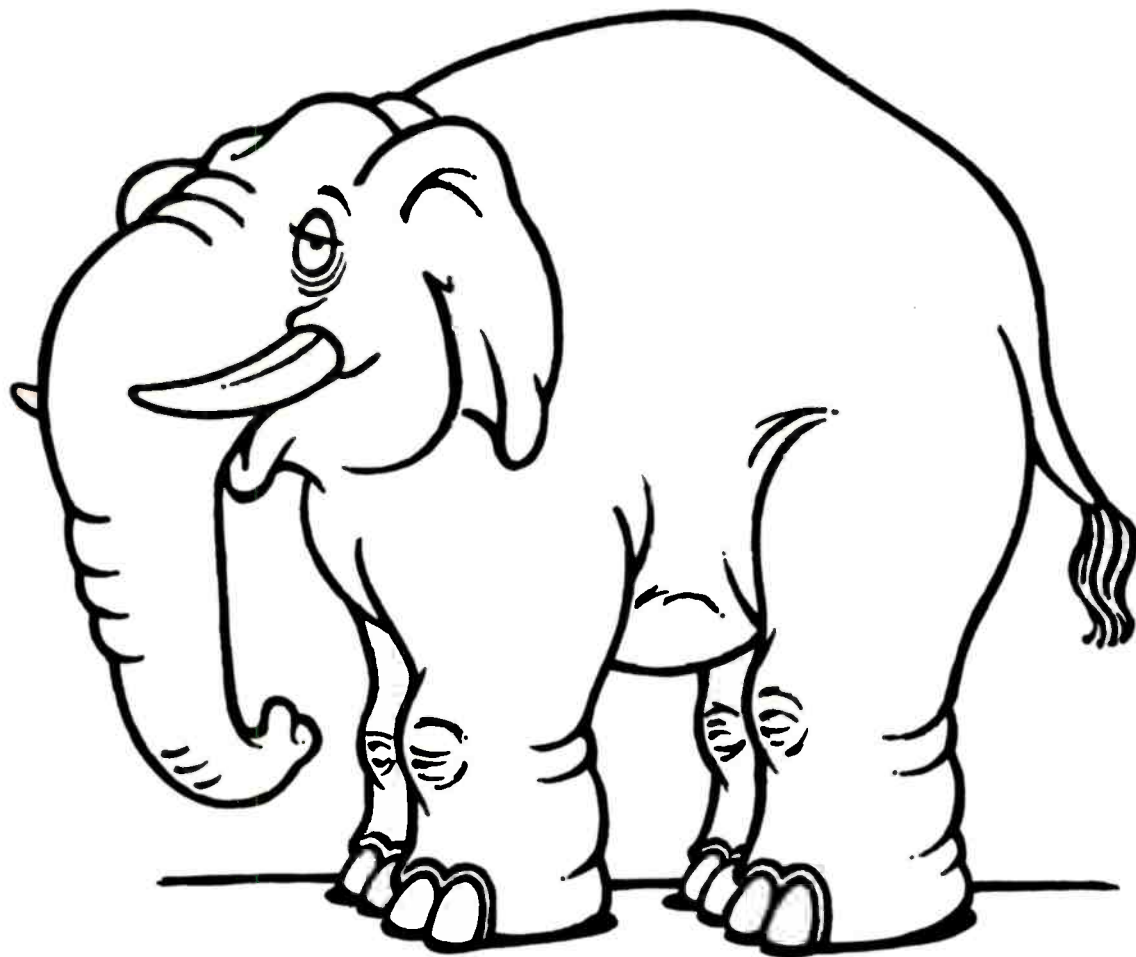
founded on the correct observation that a pair of speakers can only produce part of the environment that accompanies a live performance. To re-create the *whole* acoustic effect, it is necessary to reproduce (or simulate electronically) the ambience of a concert hall, night club, or whatever. When done properly, four-channel sound could be staggeringly realistic. It failed for a number of reasons, not the least of which was the belief on the part of many consumers that it was simply a cynical ploy by manufacturers eager to sell more speakers. And effective quadraphonic demonstrations were extremely difficult to mount, so relatively few potential customers for a four-channel system ever heard one that *was* done properly.

More to the point, however, was that the initial promotion of four-channel sound was done by the equipment manufacturers, while the record companies waited on the sidelines to see if anybody was interested. Few people were because there were so few records to play on the new components. By the time the record companies became enthusiastic about four-channel, the hardware companies had given up, so when the records did appear in reasonable numbers, there was nothing to play them on.

And throughout all this, the broadcasting industry refused to get involved. Earlier, two-channel stereo had become a commercial reality largely because the FM stations embraced it as a way to deliver something that their AM competitors couldn't. Today, a similar process is happening with the compact disc. But four-channel broadcasting never happened, and eventually four-channel died.

Still, four-channel left some technical legacies, such as the phase-locked-loop still employed in many FM tuners, which was perfected originally as a means of detecting the subcarrier on JVC's CD-4 discrete-channel discs. And the SQ matrix system developed by CBS is alive and well, providing surround sound for videocassettes and videodiscs. Indeed, while no one wants to use the words "four-channel," under a variety of other names (such as "surround sound" and "Dolby Surround") the idea of giving ambience to reproduced music by using extra speakers and extra circuitry in a system is enjoying a vigorous renaissance. □

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Stereo Review's critics choose the outstanding current releases

NEW COUNTRY: SWEETHEARTS OF THE RODEO

SWEETHEARTS of the Rodeo, it has been said, sound the way the Everly Brothers would if they were female. There's a lot to that. The Sweethearts, sisters Janis Gill and Kristine Arnold, sport a brand of absolutely killer family harmony, and their first hit, *Hey Doll Baby*, included in their album debut on Columbia Records, is in fact an obscure Everly Brothers song, written way back when by Titus Turner after Hank Williams's *Hey Good Lookin'*. Everything about the Sweethearts points to major-league stardom. They are consummate performers who sound as tight and professional in concert as they do on vinyl (they were the first-place winners of the 1985 Wrangler Country Showdown national talent contest, beating out 151,000 other contestants), and they reek of New Wave attitude in both their stance

and their appearance (punk hairdos, leopard-print blouses, and a paisley guitar). Most important, their music is a smart and snappy hybrid of Southern California pop and the classic country influences of Hank Williams, Clyde King, Bob Wills, and Gram Parsons (whose 1968 album with the Byrds inspired the duo's performing name).

All this may make the Sweethearts sound too much like a trumped-up act—some of the hype coming out compares them with the Judds, "except with more soul"—but their music speaks for itself. Sweethearts of the Rodeo is unquestionably one of the most exciting acts to come along in a coon's age, and the album was produced with verve, sass, and style by Steve Buckingham and Hank De Vito, an ex-member of Emmylou Harris's Hot Band. If this is the direction the "new" Nashville is headed—country lyrics and emotions fueled by a rock energy—things are all right tonight. *Alanna Nash*

SWEETHEARTS OF THE RODEO. Sweethearts of the Rodeo (vocals, guitar); Vince Gill, Hank De Vito (guitar); other musicians. *Midnight Girl/Sunset Town; Hey Doll Baby; Since I Found You; Gotta Get Away; Chains of Gold; Chosen Few; Everywhere I Turn; I Can't Resist.* COLUMBIA ● BC 40406, © BCT 40406, no list price.

Janis Gill (left), Kristine Arnold: killer family harmony



HOROWITZ'S UNSURPASSABLE SCHUMANN

ALL but one of Vladimir Horowitz's new recordings issued in the last dozen years or so have come from public performances, the sole exception being a collection taped in the pianist's living room in connection with a documentary film. But some months ago Deutsche Grammophon coaxed him back into a recording studio, and the product of those sessions can be described without hyperbole as one of the high points of his recording activity in any setting. Its big feature is a *Kreisleriana* that is one of the glories of the Schumann discography as well as of Horowitz's own.

Like many another musician, Horowitz finds stimulation in the presence of an audience and the possibilities for direct communication that exist only in a live setting, and he has a distaste for the idea of anything resembling antiseptic conditions intruding in the process of making music. The new release represents, in a sense, the best of both worlds, because even in the recording studio Horowitz insists on giving a "live" performance. He had guests at his sessions, and he insisted on doing things whole.

According to Tom Frost, who produced the sessions, Horowitz played the *Kreisleriana* in its entirety several times before he was satisfied, and when retakes were called for he insisted on playing whole movements—never tiny passages to be spliced into a section. He will not think of a piece of music, or a performance, as being made up of replaceable modules. The new *Kreisleriana* does not sound fussed-over but is alive with the sort of spontaneity that informs the actual recitals, and nowhere has the magic that adheres to Horowitz's name been more impressively evident. In each of the eight fantasies, and in the work as a whole, he attains a level of poetic evocativeness beyond that of his earlier recording for CBS or, for that matter, of any other performance known to me.

While the Schumann alone would make this release indispensable, there is more, and all the shorter pieces are just as magical. Two contrasting sonatas by Scarlatti, two by Liszt, the *Valse oubliée* No. 1 (with Horowitz's own elaborations) and the seldom-heard but nobly beautiful Impromptu in F-sharp, and a Scriabin etude all come to life as more than mere encores, and the third in Schubert's second set of four Impromptus is explored and revealed in a way that makes it seem the true analog of the *Kreisleriana*. The piece that does serve as a sort of encore is Schubert's famous *Marche militaire*, in Tausig's arrangement for piano solo, played here at an unhurried tempo but with a bang-up new conclusion composed by Horowitz himself.

Richard Freed

VLADIMIR HOROWITZ: *The Studio Recordings. Schumann: Kreisleriana, Op. 16. Scarlatti: Sonata in B Minor (K. 87); Sonata in E Major (K. 135). Liszt: Impromptu ("Nocturne") in F-sharp Major; Valse oubliée No. 1. Scriabin: Etude in D-sharp Minor, Op. 8, No. 12. Schubert: Impromptu in B-flat Major (D. 935, No. 3); Marche militaire in D-flat Major (D. 733, No. 1, arr. Tausig).* Vladimir Horowitz (piano). DEUTSCHE GRAMMOPHON ● 419 217-1 \$10.98, © 419 217-4 \$10.98, © 419 217-2 no list price.

Paul Simon: endlessly inventive



Vladimir Horowitz: alive with spontaneity

PAUL SIMON'S MAGNIFICENT "GRACELAND"

PAUL SIMON'S audacious and irresistible new album, "Graceland," is by far his best work since his 1972 solo debut, and as with that earlier effort, its virtues are all the more conspicuous because it arrives at a time when the only important trend in pop music is toward a sort of high-tech corporate blandness that cuts across all genres. What Simon has accomplished here—an unprecedented cross-cultural mixture of his trademark Lit-Major-in-the-Brill-Building pop with the sound of African street music—would be a political statement of sorts even if the street music in question didn't originate from the heart of apartheid. Endlessly inventive, unabashedly intelligent, and grounded by a rhythmic groove as exhilarating as it is unexpected, "Graceland" shows that there's no excuse for the Me Tooism that dominates the record business, that there's no reason everyone has to sound like everybody else.

Its adversarial relationship with the current pop climate aside, however, "Graceland" is still something to marvel at. The South African musicians Simon has enlisted as collaborators work a style that's both exotic and familiar. Early rock-and-roll, funk, and country filtered through a Third World perspective produce a music that's off-kilter to Western ears yet instantly compre-

hensible and immediately addictive. The sound simply oozes with humanity and heart, and it's not surprising Simon fell in love with it. What is surprising is that he responded without a hint of condescension.

Smart enough not to try to go native, what Simon did instead was to meet the African stuff halfway, layering it with the sort of folkish instrumental textures he's always favored and providing lyrics that are allusive, lyrical, and often very funny in a deadpan surrealist way. The *Graceland* of the title is intended in part as an Elvis Presley reference but also turns out to be an extremely apt metaphor. The music here can be seen as an attempt at salvation through musical synthesis. Of course, you can ignore all that if you want and simply drift away on the exquisite harmonies provided by Cesar Rojas and David Hidalgo of Los Lobos on *The Myth of Fingerprints* or by the Everly Brothers on the title song. Or you could merely marvel at the seemingly effortless playing and unquenchable rhythms that hold the whole album together.

Simon has already taken a lot of flak from the sectarian left because the album lacks explicitly political songs about the South African situation. The argument is that "Graceland," despite its magnificent music, is a liberal cop-out at best and a betrayal at worst. That's not only unfair, it's plain wrong. I can't imagine anybody hearing this superbly vital music without realizing, instinctively, that a political system that makes its creators second-class citizens and near-slaves has got to

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go. Just to put things in perspective, compare "Graceland" with an anti-apartheid anthem like *Sun City*. For all its righteous indignation and overt denunciations of the Pretoria regime, *Sun City* was still-born as a work of art and is already gathering dust. "Graceland," on the other hand, makes the same points with wit, compassion, and understatement. It bids fair to be remembered someday as the musical equivalent of Picasso's *Guernica*. Art beats agit-prop every time. *Steve Simels*

PAUL SIMON: *Graceland*. Paul Simon (vocals, guitar, six-string bass); Chikapa "Ray" Phiri (guitar); Baghiti Khumalo (bass); Isaac Mtshali (drums); other musicians. *The Boy in the Bubble; Graceland; I Know What I Know; Gumboots; Diamonds on the Soles of Her Shoes; You Can Call Me Al; Under African Skies; Crazy Love, Vol. II; That Was Your Mother; All Around the World or The Myth of Fingerprints*. WARNER BROS. 25447-1 \$8.98, © 25447-4 \$8.98, © 25447-2 no list price.



Reinbert de Leeuw: greatest sensitivity

LISZT: A LATE CHORAL MASTERPIECE

THE spare-textured, often boldly imaginative late works of Franz Liszt have been recorded sporadically over the years. Perhaps 1986, marking the centennial of Liszt's death,

will yet yield a more comprehensive and systematic survey of this still relatively little-known part of the composer's creative output. In the meantime, Philips has done a great service by releasing a recording of his *Via crucis*, beautifully sung by the Netherlands Chamber Choir under Reinbert de Leeuw.

Via crucis, a setting of Latin texts describing the Stations of the Cross, stands high among Liszt's late choral works. Yet it was not only unperformed during the composer's lifetime, but every attempt on Liszt's part to have it published came to naught. Not until 1929 did *Via crucis* have its world premiere, in Budapest, and it was finally published in 1938.

The scoring is basically choral, with solo voices taking the brief roles of the main characters, and four of the fifteen relatively short sections are purely instrumental, played by organ or piano. De Leeuw has chosen the version with piano, and he himself accompanies the choir. The effect is of an intimate performance such as you might hear in a private chapel.

The work relates the Crucifixion story in an almost artlessly simple, yet touching manner, but there are quietly startling passages, such as in the proto-impressionist keyboard writing for Station II, where Jesus takes up the cross, or in the post-*Tristan* harmonies of the instrumental Station IV, where Jesus encounters his mother, or the strikingly chromatic triad progression at Station VIII, *The Women of Jerusalem*. The music becomes increasingly intense and dramatic up to the climatic moments of the Crucifixion proper, achieving catharsis in the austere keyboard solo for the deposition of the body (Station XIII) and in the final pages, for mezzo-soprano and choir, evoking the entombment. The performance throughout is marked by the greatest sensitivity and tenderness, with the choral work enhanced by fine solo contributions, and the recording is a model of its kind.

David Hall

LISZT: *Via crucis*. Reinbert de Leeuw (piano); Netherlands Chamber Choir, Reinbert de Leeuw cond. PHILIPS 416 649-1 \$10.98, © 416 649-4 \$10.98, © 416 649-2 no list price.

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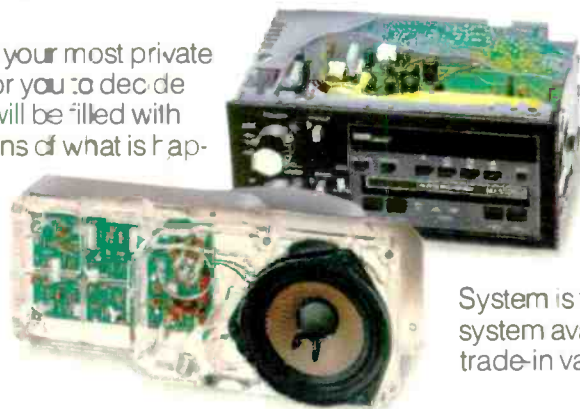
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By Drew Kaplan

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For your Apple IIE, you'll need a serial interface with an RS232 port, a cable and a modem program. It's all yours for just \$89 (\$4 P&H). Order No. 4357.

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For business or pleasure, you'll communicate, gather information and save time. If you aren't 100% satisfied, simply return it in its original box to DAK within 30 days for a courteous refund.

To Order Your ADC 1200 Baud Intelligent Modem, now including CompuServe's Complete Subscription Kit (nothing else to buy), with \$25 worth of on-line time, risk free with your credit card, call toll free or send your check for DAK's market busting price of just ~~\$169~~ plus \$6 P&H. Order No. 4334.

The OnLine Directory of over 1,100 Data bases, complete with descriptions
...Next Page Please

...Modem Continued
is just \$14⁹⁵ (\$2 P&H). Order No. 4358.

The ducks will be sure to be quacking up a storm when they see BSR's factory direct, through DAK, price on this state-of-the-art 1200 baud intelligent modem.



A LOOK AT COMPUSERVE & MORE

Get a date, check your stocks, leave E-Mail, or post messages on Electronic Bulletin Boards. Transfer files or download public domain programs. Let your computer bring you the wealth of elec-

tronic information that's on-line.

Imagine dialing a number and hooking up to a free Electronic Bulletin Board where people post messages about everything, from new jokes (I've signed onto a joke bulletin board,) to computer equipment they want to sell.

Most are free, some cost money. But until you are on-line yourself, no brief description that I can give you will even scratch the surface of what's available.

But, let's take a brief look at part of the menu (index) that you'll have at your fingertips when you log onto CompuServe. I've used CompuServe's names or descriptions. This is by no means complete. And CompuServe is just one of many data bases available to you.

No matter what your interests are, you'll spend hours on-line learning about things, making plane reservations or even playing logic games. And, on most bulletin boards, you'll find the numbers of other bulletin boards.

PARTIAL COMPUSERVE INDEX

AIRLINES, ARTS (Art & Literature), ATARISIG (Atari Forum), AVIATION (Aviation Forum), BANK (Home Banking), BANSHI (Ban-shi Game), BROKER (Brokerage), Business (Business Menu), C64SIG (Commodore 64 Forum), CASTLE (Castle Telengard Game), CBIG (CB Interest Group), CBMSIG (Commodore Programming Forum), Clarke school (For the Deaf), COCO (Color Computer Forum), COM-MODITIES, CP/M, CQUOTE (Current Quotes), DEMOGRAPHICS (Sup-erSite), DISCLOSURE (Public Company Details), EARNINGS (Earnings Projections Menu), EASY (EasyPlex), ECONOMICS, EDUCA-TION, EMAIL, ENCYCLOPEDIA (On-Line Grolier's Academic Amer-ican Encyclopedia), ENGINEERING (Engineering Menu), ENTERTAIN-MENT (Entertainment Menu), ENVIRONMENT (Environmental For-um), EPIE (EPIE Forum), FINANCE, FINTOL (Personal Finance), FLIGHTS (Travel Menu), FOOD, FORUMS (Menu of Forums), GAMES (Menu of Games), GOURMET (Electronic Gourmet), HEALTHUSERS (Health Users Group), HOBBIES (Hobbies Menu), HOLLYWOOD (Hollywood Hotline), HOME (Home Menu), HOTELS (A to Z Hotels), IBMNOVICE (IBM Novice Forum), IBMSIG (IBM Users Forum), INSURANCE, INTERESTS (Other Interests), INTERFACE, INVEST-MENTS (Investments Menu), IQINTERFACE (IQ Interface Program), LAWSIG (Law Forum), LEGAL (Legal Menu), LEISURE (Leisure Travel Menu), LIBRARIES (Home Reference Menu), LOTUS (World Of Lotus), LOVE (Love Messages), MAGAZINES (Electronic Publish-ing Menu), MAUC (Apple Users Group), MEDICAL (Medical Menu), MOVIES (Movie Reviewettes), MSOFT (Microsoft Users Group), S&P (Standard & Poor's), SCI-FI (Science Fiction Form), SCIENCE (Science Education Forum), SHOWBIZ (Showbiz quiz), STATE (De-partment of State), SPORTS (Sports Menu), TECHNOLOGY, TICK-ER (Ticker retrieval), VACATION, VIDEO, WEATHER (NOAA Weather Wire), WINEFORUM (Bacchus Wine Forum), and MUCH MORE.

On one board, I found the numbers of 40 other boards. Wow, there's so much infor-mation, education and entertainment.

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Computer Power Controller



Protect your computer and 5 peripherals from spikes, turn everything on and off from the front & swivel your monitor.

By Drew Kaplan

It's great. Now you don't have to reach around the back of your computer to turn it on. And not only can you turn on each peripheral separately, you can turn them all on or all off with one switch.

But there's more. This all new Power Controller is much more than just a fancy 'octopus' that supplies you with 6 outlets to get rid of cumbersome tangled cords.

It aids in the prevention of damage caused by voltage surges and spikes. It then goes on to filter your AC to help protect your equipment and data from line noises caused by power disturbing air conditioners, refrigerators and the like.

And look at this. It protects your equipment from itself. There are 4 separate filtered sections. So, your computer will be protected from your printer, modem or other peripherals.



BUT IT'S CONVENIENT

There are 6 protected 3-wire outlets

on the back. 5 are switched from the front. One is unswitched but spike protected so you can leave a peripheral on.

Each of the 5 switched outlets has a non-glare status light so you know what's on. Push a button for on/off control.

You can swivel the monitor from side to side. So, if you have a separate keyboard, you can really type in comfort.

Above, you can see The Power Controller between the Visual IBM® Compatible Computer and its monitor. It is 1 3/4" high, 13 3/4" wide and 12 3/4" deep.

You can use it with virtually any computer. (It can hang off the back up to 3 1/2 inches with no problem.) It's a perfect combination of convenience and protection for your computer system. It's backed by a limited warranty.

PROTECTION & CONVENIENCE RISK FREE

I've only had my data wiped out once by a power surge. But, I had over 2 hours of irreplaceable 1st draft copy in my computer when it happened.

Now, I'm using my new Power Con-

trollers with 4 different computers. With this added protection, maybe I won't lose data again. And, I've learned to save my data much more often since my loss.

If you're not 100% satisfied, simply return it to DAK within 30 days in its original box for a courteous refund.

To order your 6 outlet Power Controller with Spike Protection, Line Filtering, Circuit Breaker and a 10' 3-wire grounded power cable risk free with your credit card, call toll free or send your check for DAK's blockbuster price of just \$79 (\$6 P&H). Order No. 4623. CA res add tax.

I like the convenience. It's something that helps me every day. But, I'm thrilled with the added protection. If it even helps once, it's worth many times the cost.



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\$49.50 BREAKTHROUGH!



When you are at rest, so is your heart. A low resting heart rate usually means you're in good condition. Have you checked yours?



When you exercise, you should reach your heart's target zone. But, have I reached my exercise target zone, or just had too much coffee?

Heart Window

Now you can exercise, rest, swim or go out to dinner wearing the latest in computer pulse takers on your wrist. Plus, it's a talented sports watch and a formal dress watch too.

By Drew Kaplan

It's a fact. You can tell a lot about yourself from your heart rate. You can evaluate the condition you are in, how much stress you're under, and how hard you should be exercising.

Think about it. How fast does your heart beat when you climb a flight of stairs? And how long does it take for your heart rate to return to normal?

Well, if you're at all like me, you may be a little out of shape. While I'm only 37, several friends of my own age have recently had heart attacks. And frankly, I'm getting just a bit worried.

You see, I am getting past the point where I can simply say, "I'll get back into shape next year."

So, whether you're a long distance runner (this is the ultimate jogging companion), or just a few pounds overweight like I am, your heart rate will give you a picture of your heart and body's condition.

Now you can take your heart rate anytime, anywhere with the newest in sophisticated electronic pulse takers.

And best of all, this heart computer is contained in a beautiful 24 hour alarm, 24 hour chronograph, LCD watch, that you will be as proud to wear with a coat and tie as you are when you're running.



YOUR HEART'S TARGET ZONE

Your heart, just like any other muscle in your body, requires exercise. Unfortunately, unlike your arms, you can't see your heart's condition just by looking.

The type of exercise called aerobic exercise is specifically designed to exercise your heart. The purpose of aerobics is to reach your heart's target zone.

So what is your target zone? Your target exercise zone is between 60 and 80% of your maximum heart rate. And here's an easy way to figure it out.

Simply subtract your age from 220 beats per minute. So, for me at 37, my maximum heart rate is (220-37) or 183.

So when I exercise I should get my

heart rate up to at least (183 X 60%) or 110 beats per minute, and no higher than (184 X 80%) or 146 beats per minute.

With the Heart Window to help me, I can be sure that my workouts are valuable for my heart and neither dangerous escapades or total wastes of time. Of course, before beginning any exercise program you should consult your own doctor. Note: The Heart Window is designed to indicate your pulse rate and aid your exercise, not to make medical diagnoses. **BUT ISN'T EVERYONE DIFFERENT?**

Here's the really exciting part. The worse shape you're in, the faster you'll reach the target zone and the less work you'll have to do to stay in the zone.

You see, as you get in shape, your heart doesn't have to beat as hard to do the same amount of exercise. Just as when you work out with weights your arms become stronger, your heart becomes stronger with aerobic exercise.

So the Heart Window is safe for the beginner or the athlete. And, you'll really see your improvement as you exercise. But you don't have to exercise. Just wearing the Heart Window and using it at the office when you're under stress, after you've walked up some stairs or around the block, will make and keep you aware of your body's physical condition.

And look at this. Sit down at your desk and take your pulse. Then drink a couple of cups of coffee and take your pulse again. You'll see just what your morning 'pickup' actually picks up, and if, God forbid, you smoke, take your pulse before and after a cigarette. Wow!

ALL ELECTRONIC

With Innovative's new Pulsemeter watch, you'll have supreme accuracy. It's like a direct electronic line to your heart.

You see, unlike other pulsemeters that use a light shining through your finger, or a microphone to take your pulse, this instrument actually measures the electrical impulses that cause your heart to beat.

The back of the watch is one receptor, and the metal touch sensor on the front of the watch acts as the other sensor. Just touch the sensor, and you'll see your pulse on the large LCD Display.

IS IT A DRESS OR SPORTS WATCH?

Innovative Time thinks that everyone interested in their pulse must be a pro-



fessional athlete. So, they've built this watch with all the athletic extras.

It's not only water resistant, it's guaranteed to 60 feet (although you can't actually take your pulse underwater). It has a stopwatch, a lap timer, and dual finish mode. Its band is made of very tough polymers. So, it's a sports watch.

But wait, I don't like black watches for dress. So, I've gotten Innovative to add a deluxe matching stainless bracelet to the watch. It's rendered in stainless and black and is a perfect high fashion choice. So, it's a dress watch.

Plus, there's a 24 hour alarm and an hourly chirp. The stainless band is great for sports or dress. So, you'll get the watch with the black band on it and the high fashion band packed with it, compliments of Innovative Time's superb engineering and DAK's good taste.

The Heart Window is backed by Innovative Time's 1 year limited warranty and comes with a 1 year battery in place.

TRY THE HEART WINDOW RISK FREE

Now you can look at your heart as easily as the time. You'll see how you react to stress, foods and exercise. Don't let DAK's low price confuse you. Take this pulse watch to your own doctor and have him test it.

Try the Heart Window risk free. Try exercising and then check your cardiac recovery rate. If you don't like what you see, you'd better keep the watch. But if you just don't like the pulse watch, simply return it within 30 days in its original box for a courteous refund.

To order your Heart Window, Pulse Sports/Fashion Watch, complete with 2 bands risk free with your credit card, call toll free or send your check for just \$49.50 plus \$3 for postage and handling to DAK. Order No. 9844. CA res add sales tax.

In the gym, at the track or at the office, you'll have a direct connection to the condition of your heart.

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Fat Watcher Plus

Now you can walk or jog around the block, walk around the office or even around a trade show, and know how far you've traveled and how many calories you've burned. Use the alarm to set calorie and distance goals.

By Drew Kaplan

No, you don't have to be fat. And no, you don't have to be a marathon runner. However, if you are, you're going to marvel at the feedback you'll get from this new electronic Body Monitor.

Before we explore how you can use this Body Monitor's capabilities to aid you in losing weight (as it is me) and to measure your training achievements, let's look at some interesting curiosities.

If you're like me, you've probably wondered just how far you go when you walk around the block. And, every year I attend the Consumer Electronics Show and I've always wanted to know how far I walk.

Since my plane always seems to be at the last gate at every airport, I've wondered just how far I go. I've also been curious about how much ground I cover in an average day at the office.

Well now, not only will I know how many steps I've taken, I'll know how many miles or hundredths of miles I've gone and how many calories I've burned.

Now we will know it all. And, with the ability to set goals, we can use this monitor to help achieve our desired fitness.

ONE STEP AT A TIME

It all starts out with one small step. Just clip the Body Monitor on your belt or waist band and away you go.

First it counts your steps. As you can see below, I've taken 1544 steps.



It knows how far you've gone because you set it to your particular stride length. As you can see, I've got mine set at 2½ feet. But you can set yours from 0 to 7'.



Because it knows your stride length, it automatically calculates the distance you travel. Just touch a button, and as you can see, I've traveled 0.58 miles.

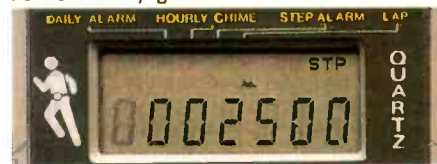


Push the button again, and you can see how many calories you've burned. The Body Monitor has a built-in table that calculates an average of how many calories you've burned, based on the number of steps you've taken.

And, you can be even more accurate by adding your exact weight to the body meter's reading. A formula is included.



What's really great is that you can set a target for yourself to achieve. Here I've set 2500 steps. When I reach 2500 steps, an alarm will sound to tell me that I've achieved my goal.



But steps aren't very interesting, so you can set the alarm to let you burn 100 calories or go 3 miles. It's all calculated through the steps, so it's really easy.

Let's say I want to eat an ice cream sundae. It has 260 calories. So, I'd have to walk 5200 steps. I'm forgetting the ice cream sundae, but I may have a piece of cheese or maybe even a cookie.

Using the Body Monitor for running or walking lets you see just what you've accomplished. And while I can't speak for you, I personally work and play best when I set goals.



The Body Monitor lets me set and achieve goals. So, it's been a terrific aid in my personal fitness program.

By the way, it's 1.03 miles around my block and I burn about 105 calories.

I'm really excited about finding out just how far I walk at the Consumer Electronics Show, but I'll have to wait till it opens in January to find out.

SO MUCH MORE

It may look small, but it has so much inside. It has a built-in clock with hourly chime, so you don't have to wear a watch.

It has a stopwatch, accurate to 1/100th of a second resolution. And not only does it have a lap timer, it has first and second place finishes.

But, with all its frills and all its great curiosity satisfiers, it's really a precision fitness aid.

So, if you walk, jog or exercise, the Body Monitor can aid in measuring what you've accomplished. It comes with a one year battery, and it's backed by a one year limited warranty by Innovative Time, the Pulse Watch People.

SATISFY YOUR CURIOSITY RISK FREE

I've been dieting and exercising for years. I use my pulse watch all the time and it tells me how I'm doing. Now the new Body Monitor gives me feedback as to what I'm accomplishing.

And, I particularly like the goal setting alarms. Now, instead of watching my watch to see when I've run enough, an alarm sounds when I'm through. Plus, it's really neat to know how much ground you've covered around the office or around the block.

If you're not 100% satisfied, simply return it to DAK in its original box within 30 days for a courteous refund.

To order Innovative Time's Body Monitor with Step Counter, Mileage Counter, Calorie Counter, Stop Watch and Goal Setting Alarm, call toll free, or send your check for DAK's breakthrough price of just \$39⁹⁰ (\$3 P&H) Order No. 4651. CA res add tax.

It's great for fitness, but I'm wearing mine to work and even around the house. It's small in size, but it sure feeds back a lot of exciting information.



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a rose by any other name

It's the sweetest phone that this writer has ever used. From its elegant good looks to its elegant sounding speakerphone, it's a class act. And, it remembers and dials up to 200 numbers by THE NAME of the person you want to call. Plus, it's now available in ivory and 1-line models too.

By Drew Kaplan

It's not red. And it has no aroma. But it is definitely a rose amongst the thorns. Here's an all new name dialing 2-line conferencing speakerphone that will revolutionize your concept of telephones.

As president of DAK, I've tested hundreds of phones. Some are very good and you will find them in DAK's catalog. But, I've never used a better sounding, more useful phone, at home or at the office, than the phone pictured above. Let me tell you some of the reasons why.



FIRST, IT DIALS BY NAME

I hate having to remember phone numbers. With this phone, all I do is push the 'H' button when I want to dial Home. The 'D' button dials DAK. And, the 'I' button dials my insurance broker.

Most other dialers make you remember location numbers, such as '26' for 'Mom'. So, you're really just substituting one number for another. Now, all I need to remember is the person's name.

Where I have more than one name that begins with the same letter, I can scroll through the names before it dials, or enter just the first 3 letters. So, if I want to dial Howard instead of home, I push 'H', 'O', 'W'.



It's quick, it's easy and you'll never have to remember or look up and dial anyone's number again. Each memory location can hold up to 32 digits and you can store up to 200 different names. It has a memory capacity of 4096 digits.

You can store your Sprint and MCI codes with the person's name, in a separate location that the phone automatically accesses as it dials, or totally separately so that you can automatically access the service and then dial a number manually.



And speaking of manual dialing, you don't even have to push the speakerphone button to dial. When you touch the first number on the dial, the phone automatically seizes the line, turns on its speaker, and you have on-hook dialing.

So, you never have to lift the receiver or activate the speakerphone unless someone answers the line.

FORGOTTEN HANDSET

This phone has the latest K2 handset. It gives you traditional Phone Company fit and feel, yet, I find it even more comfortable to use.

But, you'll probably never use it. The speakerphone is so powerful, so clean, and so easy to use, you'll never pick up the handset unless you need privacy.



I've used good speakerphones before, but this speakerphone's sound quality rivals an in-person conversation, not a phone call. How's that for a description of a phone you can try on a 30 day risk free trial?

2-LINE MASTERPIECE

You can select Line 1 or Line 2. And, you can push 'Conference' to combine both lines for convenient business conferences or friendly group calls with friends. There are LEDs that show which line is 'In Use', 'On Hold', or 'Ringing'. And, there are different rings for each line.

Installation is a breeze. It simply plugs into one standard modular 2-line jack or two modular 1-line jacks. Nothing could be simpler. Just plug it in.

PAGES OF HELPFUL FEATURES

The list of features would have to be microfilmed to fit on this page. There's a large LCD display that shows you the name you want to call and the number.

An automatic timer tells you exactly how long you've been talking. And, a clock appears on the display whenever you hang up.

Every conceivable feature from Mute to Tone/Pulse switching, to Pause, to Flash, to battery backup (2 C batteries included), to three direct Emergency Memory Keys and more is included.

There's even Automatic Redial which will redial a busy number for you every 30 seconds.

YUPPIE POWER

I'm anything but a yuppie, even though I just turned 40, but when you look at the sleek, swept back, silver-grey HiTec appearance, and when you examine its complete computer keyboard, you'll understand why it would warm a yuppie's heart. My heart is warmed by what it does, but I must admit it is impressive.

It's made by Colonial Data, a research company partially owned by one of the largest inter-connect (big business phone systems) companies in the world.

It is 9½" wide, and it's backed by Colonial's standard limited warranty. **PUT NAME DIALING ON YOUR LINE RISK FREE**

It's the best sounding speakerphone I've ever heard. Dialing by names instead of numbers is a quantum leap in both technology and convenience.

Now, I don't have to remember people's phone numbers. I just touch a 'C' for customer and let the phone do the rest.

If you are not 100% convinced, as I am, that this is the best sounding, most convenient phone you have ever used, simply return it in its original box within 30 days for a courteous refund.

To order your Name Dialing 2-Line Speakerphone with God only knows how many features risk free with your credit card, call toll free or send your check for DAK's breakthrough price of just \$129 (\$4 P&H). Use Order No. 4335 for Silver-Grey. Or, use Order No. 4452 for Ivory.

If you'd like the 1-line model in Ivory without the 2-line features, it's just \$99⁹⁰ (\$4 P&H). Order No. 4453. CA res add tax.

In DAK's electronic world, where a new best is achieved almost every day, this phone stands out as the 'best' best I've ever had the pleasure of introducing. DAK and the 'a rose by any other name' phone are not affiliated with CXC Corporation's Rose Console.



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Surround Sound & More Explained

Journey into space, down mountains or through meadows as you sit in front of your TV. Now the bigger than life sound of a movie theater comes to your living room. Just wait till a space ship warps right through your couch!

By Drew Kaplan

It's awesome. Cars will race out of your TV and through your room. You'll jump because gun shots are so real. And, if you're walking through a meadow, you'll hear crickets and birds all around you.

This is just the tip of the iceberg of the effect that you can expect when you connect this Surround Sound Processor to your stereo VCR or even monaural VCR.

WHAT IT IS

There's just no two ways about it. You are right in the middle of the action. If you're watching an avalanche, you're in it.

If there's a storm, you'd better get your rain coat. Battles will be waged and you'll be right in the middle. And, it's all in your grasp, now!

This new Surround Sound Processor takes the stereo signal from your VCR (read on for monaural) and produces dramatic sound through its two front, shielded 2-way speaker systems.

Well, big deal. That's what you get from stereo. Ah, but hold on to your chair. Because, there are over 700 movies that have Dolby® Stereo Surround Sound encoded on them. Note: Most tapes just say Dolby® Stereo, not 'Surround' on them, but wait till you hear the effect.

Surround Sound has infused movies with life when you have been at a theater. But, now you can decode them at home.

The Surround Sound signal is obtained by matching the Left and Right Channel Phase relationships and sending the difference to the rear.

The engineers create these phase differences to provide the special effects from the rear. And let me tell you, it will knock you right out of your easy chair.

You'll also have variable rear delay to add to the rear speakers' effect. You'll have massive 3 dimensional movement.

So, unlike stereo where things only move from side to side, now they can also move from the front to the back.

Moving from 2 to 3 dimensional sound is mind boggling. There's absolutely no limit to the locations in your room from which any specific sound can come.

FIRST FOR STEREO

Switch in Surround. You'll hear the movements begin all around you. You'll

hear laser blasts from the left, applause from all around you when you're at a ball game, or a freight train approaching you from the rear. Watch Out!

If the movie you are watching doesn't have Surround or you're watching Stereo TV, switch to 'Stereo'.



You'll receive a very powerful version of Surround that is created by this processor. You'll still have full front stereo.

Plus, you'll have the variable ambiance and movement cues from the rear. In fact, in many cases you'll find 'Stereo' to be even more powerful than Surround.

There's a second stereo button called 'Music' that is especially designed to add only ambiance to the rear, for musicals and music videos.



BUT IS MONAURAL DEAD?

You haven't been left out. There's a third switch which infuses your monaural VCR or TV station with resounding life.

It's a highbred stereo synthesizer. First it synthesizes stereo for the front speakers. Then it synthesizes a third channel for the rear action effect.

Add the variable ambiance delay and you'll have sound all around you. It's amazingly full and rich.

You'll have all the effect of a star ship going through your room. But, it won't be with the precise location detail of the Surround Signal itself.

Don't despair. It's terrific. It's full and alive. If you don't have a stereo deck for direct comparison, you'd swear that you had real Surround Sound.

It's amazing. Your viewing of TV or video will never be the same again.

EASY INSTALLATION

It's easy. Just put it on top of your VCR or TV. Then connect the audio output(s) from your monaural or stereo VCR to the decoder. And look at this. You can switch between two video sources.

Anyway, the rest of the installation consists of hooking up the 4 speakers. Put two in front and two to the side or rear (wire included) and you are ready for thrilling, throbbing AV excitement.

ALL THE CONTROLS

You'll have control of everything. Of course you can select input 'A' or 'B'. And you can select Surround Sound, Stereo, Synthesized Stereo or Music.

There's a master volume control. Plus, there's an input level control. And, there's a rear effects level control.

You can also delay the amount of ambient delay from 10 to 30 milliseconds. Plus, there's balance, bass and treble.

The speakers are a specially sealed acoustic suspension design. You'll be amazed at the massive sound created by the 4 woofers and 4 tweeters. It's made by Universal, the cable specialists, and it's backed by their limited warranty.

EXPLODE YOUR CONCEPT OF VIDEO RISK FREE

The realism of a space ship warping through your living room is unparalleled. If you aren't 100% enthralled, simply return it to DAK within 30 days in its original box for a courteous refund.

To order Universal's Video Surround Sound, Stereo, Synthesized Stereo and Music decoder and enhancer that will explode your concept of the capabilities of home video risk free with your credit card, call toll free or send your check for DAK's breakthrough price (including all 4 speaker systems) of just \$199⁰⁰ (\$12 P&H) Order No. 4690. CA res add tax.

Move from one or two dimensional video viewing to live, center of the action, thundering, 3 dimensional video sound.



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Smart Sound Detonator

Obliterate the wall between you and the individual instruments in your music. Infuse your own stereo system's sound with a breathtakingly vibrant 30 to 50% improvement in sound quality that you can measure with this superb BSR Equalizer/Spectrum Analyzer limited \$149 close-out.

By Drew Kaplan

Close your eyes. Touch a button. And you'll hear your stereo system literally explode with life.

You'll hear the gentle brushes on a snare drum, the startling bone-jarring realism of a thunder clap, or the excitement of a full cymbal crash.

You'll hear string basses and other deep low instruments emerge from bass (that will sound murky by comparison), with such clarity and such definition that you'll feel you can almost touch each instrument.

This astoundingly distinct yet powerful bass adds such a full bodied warm feeling to your music, you'll feel as if you've been lovingly wrapped in a warm soft blanket on a cold winter's night.

But don't take my word for the sound quality improvement. With the Pink Noise Generator, Calibrated Electret Condenser Mike and the 220 Element Spectrum Analyzer, you can instantly measure each and every improvement you make.

Plus, there's more. A subsonic filter effectively adds the equivalent of many watts onto the power of your amplifier.

Plus, with its provision for two separate tape decks including two way dubbing, you'll have much more than just greatly improved sound.

You can count on great sound from this top of the line Equalizer/Analyzer. It has a frequency response from 5hz to 100,000hz ± 1 db. And, it has an incredible 100db signal to noise ratio.

BSR, the ADC equalizer people, make this super Equalizer/Analyzer and back it with a 2 year standard limited warranty. Our \$149 close-out price is just a fraction of its true \$379 retail value.

FIRST THE EQUALIZER
YOUR STEREO'S HIDDEN SOUNDS
 Your stereo can sound incredibly bet-

ter. Just a 5db roll-off at the high end, up around 14,000hz to 16,000hz, can just decimate the harmonics that give you the open feeling you'd experience at a live concert. A similar roll-off at 60hz, causes the fundamental bass notes to just fade away into the 'murk'.

An equalizer isn't some magical device that manufactures sounds that don't exist. Most of the frequencies that will make your music really vibrant, are actually already recorded in your music.

You'll be able to prove this with a few simple tests we'll try when we discuss the Spectrum Analyzer.

You see, certain frequencies are simply not reproduced with as much volume as are the mid-range frequencies which stretch from about 800hz to 2,000hz.

An equalizer simply lets you establish accurate control of all frequencies to fit your equipment, your recordings, your taste, and your listening environment.

TOTAL MUSICAL CONTROL

And, what a job it can do. It's totally unlike bass and treble controls which simply boost everything from the mid-range down for bass, or everything up for treble. You can boost the low-bass at 31.5hz, 63hz and/or 125hz to animate specific areas or instruments.

And, when you boost the part of the bass you like, you don't disturb the mid-range frequencies and make your favorite singer sound like he has a sore throat.

The high frequencies really determine the clarity and brilliance of your music. The problem is that highs are very directional. Wherever you move in your listening room, you'll find a big difference in high end response, as you'll see when we test the Analyzer.

No recording engineer or equipment manufacturer can even begin to control your listening environment.

You can control the highs at 4,000hz, 8,000hz and/or 16,000hz, to bring crashing cymbals to life at 16,000hz while at the same time you can cut tape hiss or annoying record scratches at 8,000hz.

But there's more. Don't leave out the mid-range. You can boost trumpets at 300 to 500hz or a clarinet at 1000hz. You can boost or cut any part of the frequency spectrum a full ± 15 db.

TAPE DECK HEAVEN

You can push a button and transfer all the equalization power to the inputs of two tape decks. Now you can pre-equalize your cassettes as you record them and get all the dramatically enhanced sound recorded right on your cassettes.

This is an especially great feature when you play your cassettes on bass-starved portables or high-end starved car stereos.



SIMPLY PLUG IT IN

Use your tape monitor circuit, but don't lose it. Now your one tape monitor circuit lets you connect two tape decks.

Just plug the equalizer into the tape 'in' and 'out' jacks on your receiver or preamp. We even supply the cables.

As you listen to your records, FM or any 'Aux', any time you push the tape monitor switch on your receiver you'll hear your music jump to life.

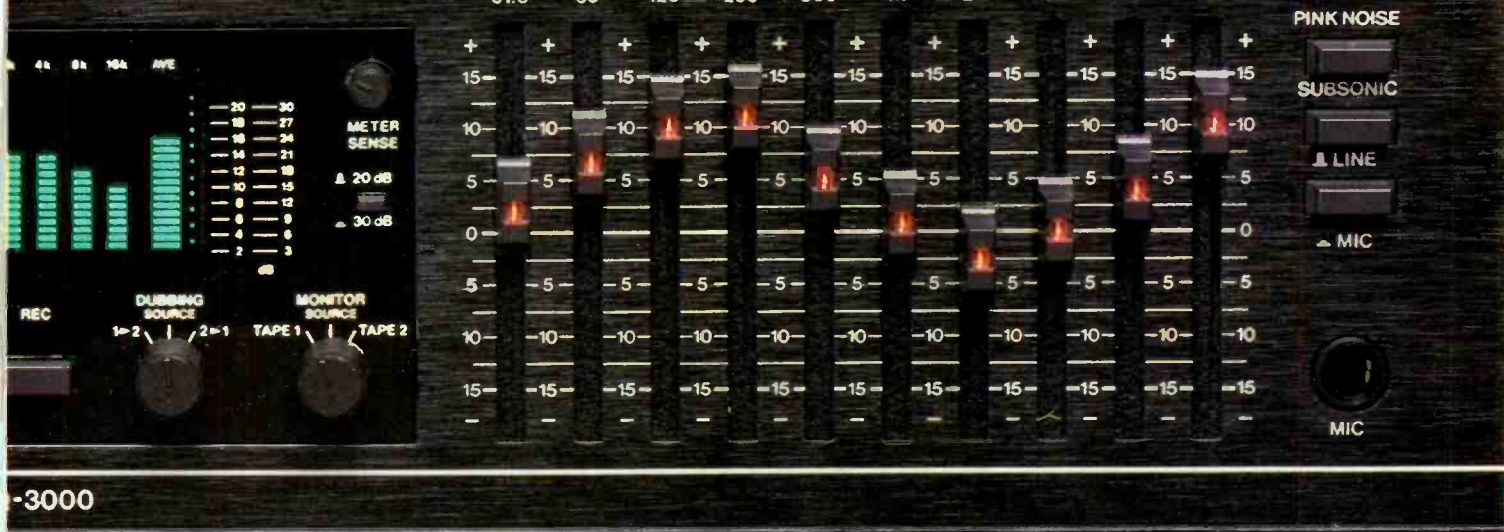
The output from your receiver is always fed directly to your tape deck(s) for recording, and with the touch of a button, you can choose to send equalized or non-equalized signal to your deck(s).

When you want to listen to a tape deck, just select which tape deck you want, turn the switch on the equalizer,

model EO

\$149 CLOSE-OUT

EQUALIZER/SPECTRUM ANALYZER



and your tape deck will work exactly as it did before. Except, now you can listen with or without equalization.

Look at this. You can dub tapes from deck 1 to deck 2, or from deck 2 to deck 1 with or without equalization.

THE SUBSONIC FILTER

Much of the power drawn from your amplifier is used to drive your woofers. When you drive the amplifier too hard, it clips and you end up with distortion.

A subsonic filter removes a lot of non-musical material you can't hear that exists below 20hz. So, it relieves your amplifier of a lot of work. It doesn't actually create more watts (Please, no letters from my 'technical' friends) for your amplifier.

But, it's like turning off the air conditioning in your car. It saves you using about 7hp of what you have. And therefore, you'll have more watts for clean powerful sounding music.

THE SPECTRUM ANALYZER

Now you can scientifically analyze your stereo listening room and test your equipment by using BSR's Real Time Frequency Spectrum Analyzer.

Plus, you'll see your music not as a single level on a VU meter, but as a kaleidoscopic parade of 10 individual 20 element VU meters.

Each is tuned to a specific octave of the sound spectrum. An eleventh 20 element meter averages all levels.

The effect is awesome. You can visually isolate a string bass or cymbal, and actually see each individual instrument almost as a wave moving across the 220 individual fluorescent elements.

THE MOUTH AND EARS

It talks. The Analyzer speaks with a voice of pure calibrated Pink Noise. Pink Noise is the standard composite 'sound' of all frequencies used for testing in labs around the world. All frequencies from 20hz to 20,000hz are generated at the exact same level at the exact same time.

It listens too. If you are testing a cassette or a component in your system, use the 'Line Button'. If you're testing your whole system with speakers, use the matched calibrated electret condenser

microphone (included). Either way, you'll have a quick, easy and accurate way to evaluate the total sound of your system.

HOW TO TEST SPEAKERS, EQUIPMENT AND TAPE

Testing your speakers in your listening room is the really crucial test. Simply place the calibrated microphone where you normally sit to listen to your stereo.



At the end of an 18 foot cord is the ear of the system. Just clip the mike wherever you sit and test your room.

Turn on the Pink Noise. You can switch to Left Channel, Right Channel or both. There's a meter range button, a sensitivity control, and even a switch that lets you freeze the meter.

Just sit down at the equalizer. Start with one channel. You'll see all 10 octave bands on the meter. Just slide the corresponding controls to increase or decrease any area that needs help.

You have now set up your system to its maximum capability. But as you'll see, location is very important. Move the microphone 5 feet to the left or right.

Then turn on the Pink Noise and check the Spectrum Analyzer. Now you can see why the specifications that come with your system are only a starting point.

Here's a way to test your tape deck and tape. First record Pink Noise for 3 minutes at -20VU. Then play it back and note the readings on the meters.

Now, record the Pink Noise again at 0VU or +3. Wait till you see how much the high end falls off. Now you'll see why all specifications are listed at -20VU.

With the Equalizer/Analyzer you can enjoy the finest stereo sound from your system and be a test lab too.

WHY SO CHEAP

BSR now only sells equalizers under their ADC name. Well, as Detroit comes out with new cars each year, ADC comes out with new equalizers. We got them to supply us with just 30,000 of last year's

ADC model before they shut it down.

They had already paid for all the tooling, all the research and design, so we were able to buy these for less than half the normal price, for cold hard cash.

THE FINAL FACTS

There are 20 slide controls, each with a bright LED to clearly show its position. Each control will add or subtract up to 15db. (That's a 30db range!)

There are separate sound detonation slide controls for each channel at 31.5hz, 63hz, 125hz, 250hz, 500hz, 1,000hz, 2,000hz, 4,000hz, 8,000hz, and 16,000hz.

BSR backs this top of the line Graphic Equalizer/Spectrum Analyzer with a 2 year standard limited warranty. It is 17 1/2" wide, 3 1/2" tall and 8 3/4" deep.

MAKE YOUR MUSIC EXPLODE RISK FREE

It's startling. Music so vibrant with life you'll swear it's 3 dimensional. Sculpture your music any way you want it. If you're not 100% satisfied for any reason, simply return it to DAK within 30 days in its original box for a courteous refund.

To order your BSR EQ3000 Smart Sound Detonator 10 Band Graphic Equalizer with Real Time Spectrum Analyzer and Calibrated Mike, with Subsonic Filter and Two Way Tape Dubbing risk free with your credit card, call toll free, or send your check, not for the \$379 retail value. Don't even send the \$227.97 dealer cost. Send just \$149 plus \$8 for postage and handling. Order No. 4100. CA res add sales tax.

The sound of your stereo will explode with life as you detonate each frequency band with new musical life. And, you can see and measure exactly what you've done.



DAK
INDUSTRIES INCORPORATED

TOLL-FREE ORDER LINE

For credit card orders call 24 hours a day 7 days a week
CALL TOLL-FREE. . . 1-800-325-0800
8200 Remmet Ave., Canoga Park, CA 91304

SAME OLD DOG, BRAND NEW SUBWOOFER

15" Thundering Subwoofer

Man's best friend meets the audiophile's best friend at an earthshaking bone jarring new price. Now you can add the impact of a 15" subwoofer to any stereo system for just 99⁹⁰.

By Drew Kaplan

A puppy may be man's best friend. Woof, Woof. . . But, now I've got a new friend you can add on to your stereo system. It doesn't need to be taken on walks, washed or fed. But, it makes a great cocktail table for you when you're being fed. And, oh what a woof it has.

GREAT SOUND FOR EVERYONE

It's called a subwoofer. And, normally it is the beloved pet of only the most ardent audiophiles.

It's not generally understood that it can be used with virtually any speaker system in any stereo. And, in addition to substantially increasing and perfecting the bass response, it has a significant impact on the mid-range clarity too.

Before I tell you exactly how marvelous your stereo will sound when you connect this subwoofer to it, there are two things you should know.

First, you'll be getting your new friend at a phenomenal price. DAK has sold over 10,000 of Cerwin-Vega's 12" subwoofers. They had a retail price of \$332, but we sold them for \$164⁵⁰.

Second, your new friend comes complete with a paid up health insurance policy in the form of a 2 year limited warranty from its father, BSR.

By the way, the puppy sitting on top of the subwoofer is the same puppy I used with Cerwin-Vega's, but wait till you hear what's under him now. You'll have BSR's 15" massive infusion of explosive bass, added to your system for just \$99⁹⁰.

But don't be misled. BSR bass is clean and tight; never sloppy or overpowering. It adds a feeling of depth and fullness to your music that you simply can't get with two or 3-way speaker systems.

HERE'S WHAT IT DOES

Basically, the problem with most speaker systems is that the bass overpowers the system. In a 3-way system, a woofer may be crossed over at about 800hz. And, in a 2-way system as high as 3000hz.

So, the woofer must handle movements of up to an inch at frequencies below about 80hz, while at the same time attempting to reproduce the very fine vibration type movements of the mid-range frequencies.

It is this difference in movements that causes both the bass to be weak or not precise, and the mid-range to become muddy (intermodulation distortion).

Even the best 3-way systems fall prey to these problems. And, it's why a subwoofer can do so much for your mid-range clarity as well as your bass.

PROBLEM SOLVED

BSR's subwoofer has a specially engineered crossover network that sends frequencies above 120hz to your regular speakers and reproduces just the mammoth movement frequencies from 120 hz down to 22hz with a special floor firing dual wound super subwoofer.

If you have downstairs neighbors, this subwoofer isn't for you. The woofer is a very special hybrid. It has a mammoth one and one half inch voice coil which allows the speaker to make the very large



movements required to reproduce the very low frequencies.

But, it would do a lousy job of reproducing mid-range, which is why, cost aside, manufacturers don't put big voice coils in normal 10" or 12" woofers.

To make the massive movements accurate, this woofer has a very large magnetic structure. This magnetic structure also makes the subwoofer system extremely efficient. (The sensitivity is 91.5 db at 1 watt at 1 meter.)

So, whether you have two or three-way speaker systems, with 8", 10" 12" or even 15" woofers, you'll find the sonic improvements staggering.

You'll hear and feel the awesome effect of thunder rumbling through your home. You'll hear a depth and dramatic fullness to your music that won't be heavy but will thrill you with its massive strength.



Here's a 'floor's eye view' of the subwoofer. You'll feel and hear bass so alive, you'll think it is.

EASY HOOKUP

It's easy to connect. Simply run the right and left speaker wires from your amplifier to the input terminals of the subwoofer. It works with any system from 20 to 150 watts per channel.

Then, you simply connect the speaker

wires from your two standard 8 ohm stereo speaker systems to the output terminals on the subwoofer. They receive the exact signal that they did before except that everything from 120hz down is routed only to the subwoofer.

Placement of your regular speakers is just as critical as usual for stereo imaging, but the subwoofer can be placed anywhere because low frequency material is totally non-directional.

The subwoofer makes a perfect cocktail or end table. Its rich wood-tone appearance matches any decor. It is 24½" long, 16¼" high and 20" wide.

TRY AUDIOPHILE'S BEST FRIEND RISK FREE

The fullness, richness and depth is awe inspiring. Wait till you connect this subwoofer to your system and experience truly massive force from your music.

If you aren't 100% satisfied, simply return it to DAK in its original box within 30 days for a courteous refund.

To order BSR's Thundering Subwoofer with its dramatic 15" Dual Wound Voice Coil Subwoofer risk free with your credit card, call toll free, or send your check for DAK's breakthrough price of just \$99⁹⁰ (\$14 P&H). Or. No. 4514. CA res add tax.

You can't replace the love and softness of a warm puppy. But, wait till you experience the richness and depth this subwoofer will add to your bass and the clarity you'll hear in your mid-range.



DAK INDUSTRIES INC.

Call Toll Free For Credit Card Orders Only
24 Hours A Day 7 Days A Week

1-800-325-0800

For Toll Free Information, Call 6AM-5PM Monday-Friday PST

Technical Information . . . 1-800-272-3200

Any Other Inquiries 1-800-423-2866

8200 Remmet Ave., Canoga Park, CA 91304

The Observers

At the office or at home, you can scrutinize up to 4 separate areas with both picture and sound. New technology allows a single cable to both power a camera and carry the audio and video signals. There's even an automatic switcher for up to 4 cameras. It's all yours at an amazing new price.

By Drew Kaplan

It does it all. And, it's absolutely terrific. You can monitor loading docks or swimming pools. You can watch for pilferage, shoplifting or accidents.

And, there's even an output for a video recorder so you can make a permanent record. Now you can see who comes and goes. And, you'll see **what they do**.

The system comes with a 12" video monitor, a sequential switching system that allows you to view up to 4 cameras from 4 to 60 seconds each, a camera complete with microphone, and an infinitely adjustable mounting arm.

You'll also get 57 feet of cable and you can add up to 300'. You can even add a weather resistant case for outside use.

LOOK AT ALL IT DOES

The technological breakthrough that allows you to make a single wire installation lets you have sound and picture monitoring of all types of areas.

Risk areas: Monitor secluded side doors, corridors, equipment yards, tool cribs and other storage areas.

Hazardous areas: Prevent accidents or get help for one fast. You can see when people do unsafe things.

Supervision: You can't be everywhere at once. Now you can see who comes and goes. Monitor an entire night crew if you're on the premises, or have an 8 hour tape you can view in about 1 1/4 hours using high speed search on your VCR.

Retail Protection: Don't leave your employees alone in your store or in your parking lot or structure. Now the manager can be there to assist. And, you can have a recorded audio and video record.

Theft: From shoplifting to employee theft to vandalism, anonymity is the culprit's protection. With observation cameras, no one knows when they are being watched or when a recording is being made. It's a safety feature to protect employees from danger and to protect the company from all sorts of crime.



NOT JUST FOR WORK

You can monitor your front door, your back yard and your pool. You can even monitor the animals in your barn or your baby in the bedroom. So, if you raise animals or children, you can always keep an eye on their safety.

And what a secure feeling for teachers, to be able to see the children on the yard at a nursery school. It's a perfect 'parent group' gift to your school or church.

Always check local laws which may restrict some types of observation.

EFFORTLESS INSTALLATION



From 3 lux to 30,000 lux, you can watch what's happening with this superb new system. You'll be amazed at how sensitive it is at low light levels.

And, whatever you monitor, you'll have a superbly detailed high contrast picture.

While I wrote this ad, I had a camera aimed out the window. As it got dark, I couldn't see down the street. But the camera's automatic sensitivity adjusted, so I could see the street on the monitor almost as well as I had in the afternoon.

And best of all, the cameras are incredibly easy to install. You don't even need AC plugs where you mount them.

And, the infinitely adjustable mounting arms attach with only 3 screws to floors, walls or ceilings.

Switch on the monitor and press a camera button. All power for the entire system comes from the monitor/switcher.

You can have one or all 4 cameras connected. And, connecting the cameras is the simplest thing of all.

This system uses standard round coax type cable, just like your home's cable TV system. Through this standard cable, Magnavox sends power for the cameras.

And, the camera sends both audio and video signals back down the very same cable. So, installation consists of simply running one standard video cable.

The monitor has a built-in electronic switcher. Most automatic switchers that I've seen in surveillance, cost hundreds of dollars. With Magnavox it's included.

You set it to lock onto any camera for a minimum of 4 seconds and a maximum of 60 seconds, or pick one camera.



The signal (both audio and video) from all cameras being viewed can always be sent to your VCR for a permanent record.

And there's more. By simply running a standard video cable, you can also watch the output of the monitor on other

TVs in other rooms.

ENDLESS USES

Think of the feeling of safety you'll have when you can monitor both the front and back of your home from the kitchen or the bedroom, or both.

The monitor is 12" wide, 11 1/2" tall by 1 1/2" deep. Each camera is just 9" deep, 4.5" wide and 2 1/2" tall and weighs 2 1/2 lbs. It's made by Magnavox and backed by their standard limited warranty.

OBSERVE YOUR WORLD RISK FREE

Use it to protect your business or home, your employees, your family and your possessions. If you're not 100% satisfied, simply return it in its original box within 30 days for a courteous refund.

To order Magnavox's Observation System, complete with 12" Monochrome Monitor, 4 Station Electronic Automated Switcher, Black and White Camera, 57' of Cable, and Infinitely Adjustable Mounting Arm risk free with your credit card, call toll free, or send your check for only **\$299** (\$11 P&H). Order No. 4415.

Each Extra Camera with Built-in Microphone, 57' Cable and Mounting Arm is just **\$169** (\$4 P&H). Order No. 4549.

Weather Resistant Cases are just **\$39** (\$3 P&H). Order No. 4550. CA add tax.

57' extension cables are just **\$19** (\$2 P&H) Order No. 4551. **Note: a pair of cable ends is included, so you can make your own cable, up to 300'.**

You'll have a new sense of security when you can see and hear what's happening. And, by connecting a video recorder, you can have a permanent record of the comings, goings and actions of everyone on your property.

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TOLL-FREE ORDER LINE
For credit card orders call 24 hours a day 7 days a week
CALL TOLL-FREE. . . 1-800-325-0800
8200 Remmet Ave., Canoga Park, CA 91304

The \$999 Typewriter/Computer BOMBHELL



Unfair Competition?

An Unfair Challenge to IBM's Typewriters and Computers

What if you and every secretary in your office could have powerful computers that were as easy to use, but cost less than IBM electronic typewriters? What if they also ran IBM compatible software? Well, now you can get this 256K IBM PC Clone, the Amber Monitor, the Letter Quality Printer, and The \$400 Software Library for just \$999.

By Drew Kaplan

Look around your office. Are your secretaries wasting time typing and re-typing letters and documents?

Well, throw out your dumb typewriters. Now typing on an IBM compatible computer can be as easy, and yes, cheaper than using an IBM electronic typewriter.

Every word you type can be stored in the 256,000 character memory or on floppy disks. So, when you make corrections to a letter or document, you'll never need to retype the whole letter again.

30 MINUTES TO PRODUCTIVITY

In 30 minutes you or your secretary will be comfortably typing letters faster than on any typewriter. This computer is so easy to use that there's no 'computer fear' from non-computer typists.

But, if you're looking for computing power, get ready to blast off. It is so powerful that it will run Lotus 1-2-3, Flight Simulator and every other IBM compatible program that we've tested.

In fact, the manufacturer states in the Operator's Guide that, "The computer is ultimately and completely compatible with the IBM Personal Computer."

Actually, typing letters is child's play for this sophisticated machine. But for \$999, it's sure to be the most popular typewriter in any office or even at home.

So, compare it to the typing ease and durability of say the new IBM Wheelwriter 5 at about \$1045, or a Xerox Memorywriter 625 at about \$1595.

Or compare just the computer section to the agility, speed, and intelligence of an IBM computer. Then, check our price.

FORGET LIFT OFF CORRECTION

Think about making a change in the first paragraph of a letter you have dictated. Just mark up the draft copy and give it back to your secretary.

She can bring the letter back onto the 80 column 25 line Amber Monitor, make the corrections, touch one button and

the letter will automatically print out with your corrections and additions.

You'll never have to reread or re-proof retyped letters again for errors. And instead of spending 15 minutes retyping and re-proofing, your secretary can be working on your next project.

A typewriter-type word processing program whose commands flash on the screen, when needed, makes this the ideal transition from typewriter to computer.

Look how easy it is to use. Simply touch the F1 key at the left of the keyboard to delete a character. F2 deletes a word. And, F3 deletes a whole line.

F5 turns this machine into a line by line typewriter for typing directly onto envelopes or forms. F6 prints out anything on screen at any time.

This is a magnificently simple program that you or your secretary will be comfortable with in 30 minutes.

But when you are comfortable, you'll want to open our sophisticated \$400 Software Library that lets you really start to use the power of this computer.



(DAK's added Software shown with Included Visual Manuals)

You can type in lists of your customer's or employee's names and addresses. Then create a letter, select which names you want to receive the letter, and the computer will automatically print out individualized letters for each person.

So if you want 5 people or 500 people

to be notified personally of your newest product or policy, now it's all automatic.

There's also a Budget Program, a Calendar Program and even a Portfolio Management Program we have included.

Of course you can use any IBM compatible PC programs from Lotus 1-2-3 to Norton Utilities. Or, you can buy other even more sophisticated word processing programs that even correct your spelling or give you an on-line thesaurus.

MORE THAN A TYPEWRITER

This IBM compatible computer with its two 360 kilobyte drives, 256K random access memory (more is available), composite video and yes, even RGB full color graphics output, is made by Visual, the 5th largest manufacturer of office graphics terminals.

Visual's computer is loaded. It has both a Centronics parallel printer output (we've included a superb daisy wheel letter quality printer) and an RS232 serial communications port (yes, you can add a modem to access outside data banks, or your main frame computer).

Visual's 1985 price list shows a list price of \$1895 for this computer. And, that doesn't include the Amber Monitor, the Printer, or the Software Library that we've added. It just includes the computer and of course the IBM compatible MS DOS 2.1 operating system.

WHY SO CHEAP?

Visual makes terminals. They thought they'd design a superb IBM Clone and sell it with their terminals.

Well it turned out that Visual's salesmen weren't equipped to sell computers and Visual had put too much money into these computers (the built-in color graphics, TTL output, 2 floppy disk drives and lots of other features) to sell them at today's stripped down prices.

So, Visual has sold them all to DAK and has taken an enormous loss. (But don't worry about Visual. They are a

large company and 'dumping' these computers just lets them get back to concentrating on their main terminal business.)

So, you'll save a fortune and that's why this is an unfair comparison to IBM.

You see, you're saving money only because Visual lost money. IBM not only needs not to lose money, but needs to make a profit as well.

And, don't worry about ending up with an orphan. Unlike small computer companies that come and go, as long as Visual makes terminals, they will be around to protect your investment. Plus, they use the Sorbus Network for service. **TAKE YOUR WORK HOME TOO! Wow!**

With the addition of a \$149 optional 25 line 80 column LCD display, you can take this computer home. It's a full monitor display screen complete with graphics.

So, when it gets to be 6:00 and there's still work to be done or files to be studied, just take the computer home or send it home with your secretary.



And, with the addition of a modem, you can even transmit files from home to the office. Or, you can log onto data bases like CompuServe or Dow Jones.

THE GOOD, THE BAD, & THE BEAUTIFUL

From your first touch of the rugged sculptured keys of this computer, you'll appreciate the built-in rugged quality.

There's even a 10 key numeric pad. The 83 key keyboard is identical to IBM's PC, except for the addition of lights on the 'Cap Lock' and 'Number Lock' keys.

The contoured keyboard is extremely comfortable. But, I must warn you that if you've never typed on an IBM PC, they've made the Shift keys and Return Keys slightly smaller than on a typewriter and it will take you a few minutes to adjust.

The computer has two floppy disk drives that use double sided double density 5¼" floppy disks. Each floppy disk holds 360,000 characters.

As a free gift from DAK, we're including a box of 10 disks. You can store 3,600,000 characters.

The computer uses a 16 bit 8088 Intel processor with a 4.77 MHz clock speed. It is AC powered and UL and FCC listed.

There is 256K of installed random access memory (RAM) for you to use as compared to 128K for most computers and the 7K on the IBM Wheelwriter 5.

We've included Magnavox's latest 80 column 25 line 12" non-glare Amber Monitor. It has 900 lines of horizontal resolution and 350 lines of interlaced vertical resolution to display graphics.

You can also connect an RGB (red green, blue) monitor for full color graphics. With most computers, the internal 'color card' can cost you several hundred dollars. Visual's has it built-in.

You can expand this computer by adding custom cards. There is an expansion port that can be directly connected to an IBM expansion chassis. Of course, the computer is infinitely expandable by running IBM compatible software.

Here's another bad point. This system is bigger than a typewriter. The computer is 18" wide and 15½" deep. And, with the monitor sitting on top, it is 14½" tall. Actually, the computer really isn't any bigger than a typewriter.

But don't forget the printer. It can be placed up to 6' away, but it really belongs next to the computer so that you can easily put in paper, envelopes etc. It is 15½" wide and 12½" deep.

So for most productive use you need a return on your desk that is about 33½" long. Of course, the printer can sit on a typing stand next to your desk or even your credenza. You'll be amazed at the increase in your productivity.

THIS IS NOT A CHEAP STARTER COMPUTER. Forget our price. Put it side by side with a similarly equipped IBM, run the same programs and you'll get the same results.

In fact, it's so compatible that you can interchange disks of your letters and programs between Visual's computer and an IBM PC whenever you wish. Wow!

THE PRINTER

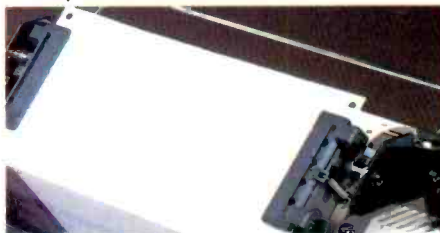
This Silver Reed daisy wheel printer will type on your standard letterhead, envelopes, 3 X 5 cards or mailing labels.

It uses the same type interchangeable daisy wheel direct impact print system as typewriters (heavy duty of course).



The printer prints at 10-12 characters per second bidirectionally. You can set horizontal spacing, 'pitch', for expanded or contracted letter spacing. You can underline automatically and you can print normal or Bold.

But, don't worry. You can simply put in your paper and type. You can even use continuous form tractor feed paper with the optional \$69 tractor feed.



Or, use your own letterhead with the optional \$99 cut sheet feeder.



FINAL NOTES

Both the Silver Reed Printer and Magnavox monitor are backed by their respective manufacturers' limited warranties. The Visual Computer is backed by Visual's limited warranty and serviced by Sorbus (or Visual).

DON'T FORGET IT'S PORTABLE

For just \$149, you'll get the factory installed 80 column 25 line (graphics capable) LCD display which simply lifts off when you're using the Amber Monitor.



You may not take your computer home or to another office every day, but the versatility is phenomenal.

ACCEPT OUR TYPEWRITER COMPUTER CHALLENGE RISK FREE

Wait till you see this state of the art computer marvel on your desk. And wait till you see what its incredible computing power can do for your productivity.

If you're not 100% satisfied with its typing or computing ability, simply return it to DAK in its original boxes within 30 days for a courteous refund.

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Remote Control Blowout

Command Consoles, Modules & Computer Interfaces

Burglars will think you've got a family of 10 at home when you're out. And, you'll feel like you've got a butler, 2 maids and a security guard when you're home. And now, for just \$19⁹⁰ you can interface your computer.

By Drew Kaplan

It's late at night. You're in bed. The lights are romantically low. The stereo that is playing in the background, as well as your lights, will be automatically turned off after you're asleep.

As you peacefully drift off, you'll be secure in the knowledge that to a burglar on the prowl, your family still appears to be moving about.

CHEAP THRILLS

Romantic lighting, burglar deterrents and energy saving controls, are just the beginning of this remarkable, installation free, remote control system.

Now you can remotely turn on, off and dim your lights, thwart burglars, and even turn the lights on or off in an unattached garage or barn.

It's exciting. Just imagine effortlessly retrofitting your home for remote control without running a single wire.

From my own nightstand, I can dim the lights in the bedroom, turn off my son's TV and turn on our outside security lights or all the controlled lights in the house. Wow!

This instant remote control system simply plugs-in in seconds and consists of inexpensive space age control modules and command centers.

It actually uses your existing house or office wiring. And if you can plug in a lamp, you can plug-in this system.



THE COMMAND CONSOLE

Imagine that you're watching TV. You can dim the lights from your easy chair. If you hear a noise, touch a button and your outside flood lights jump to life.

It's all easy when you have this top of the line Command Console, shown above, sitting next to you. It can let you control up to 16 different lights and appliances.

You can turn each on or off. You can dim or brighten lights. And look at this. You can turn all your controlled lights on or off for instant security with the 'All On' and 'All Off' buttons on the console.

You can even move it from room to room because its total installation consists of simply plugging it in. Or, at DAK's



super low price, you can put Command Consoles in as many rooms as you wish.

No matter where a Command Console is, you can control lights, fans, TVs, and stereos anywhere in or around your home.

HERE'S HOW IT WORKS

As you push each button on the command console, a powerful but silent, encoded signal is sent down its AC cord into your home or office wiring.

This safe, silent encoded signal, travels throughout your electrical system. And, it won't disturb your TV or your FM.

It can even reach your unattached garages, barns, sheds and even your pool light, porch lights and yard lights.

Wherever you want to control a light or appliance, all you have to do is plug-in one of the system's controller modules.

Each module has a rotary dial numbered from 1 to 16. Just dial in a number to match one of the 16 number buttons.

Then, just plug the module into the wall and the lamp or appliance into the module for instant remote control.

Important note: You will still have local control of all your lights and appliances by just using their normal switches, even though they are plugged into modules.

Each module actually senses when you turn the controlled unit's switch and automatically relinquishes control.



There are separate modules for lamps that have full range dimming capability from 0% to 100%, and handle up to 300 watts. There are appliance modules that have no dimming but can handle up to 500 watts, or 1/3hp motors.

And, there are even light switch modules that have both full dimming and 500 watt capability which you can install instead of your present wall switches.

You can move the modules from place

to place or change their code numbers in seconds. And of course, if you move, your system goes with you.

THE TIMER

This sophisticated electronic brain can perform 32 tasks. Just plug it in and you're in operation.

Select the module number you want to control, then decide if you want the controlled device to come on or off.

If you only want something to happen once, just push the 'Once' button.

There is a 'Daily' button that lets what you've programmed occur every day.

There's a 'Security' button. You can program lights and radios to give your house a lived-in look when you're away.

With The Timer, you can set your window air conditioning to come on an hour before you return from work.

Or, you can have your porch lights come on so you'll never enter a dark house. You can set your hall light to come on at 11PM and off at 6AM. And you can have your electric blanket shut off at 7AM and come back on at 10PM.

TELEPHONE CONTROL TOO

You can even phone home and control anything. Just plug it into both your AC line and any modular phone jack in your home or office.

Then just call your regular phone number, hold up its 'beeper controller', give your 3 digit code that you set yourself, and start controlling.

You can call home and turn on your lights before you leave work or before you leave a midnight party. It's a great security device.

SOME NEAT IDEAS

You'll find the system changes and bends to meet your exact needs. You can set several modules to the same number so that the front and rear lights can come on together.

Or, you can set all the lamps in a room to come on and even dim together.

You're sure to want a module in your dining room. Eating by subdued light is a real pleasure. And it's important to remember that not only do you get full remote control, you get 0% to 100% brightness control of your lights.

It's like getting free dimmers thrown
...Next Page Please



\$19⁹⁰ BLOWOUT
 Computer Interfaces were originally \$129 for:
 ● IBM ● MACINTOSH
 ● APPLE ● COMMODORE



...X10 Continued in with your remote control system. So, for bedside lamps, swag lamps, ceiling lights, track lights and garage lights, you'll be in full command.

And, you'll automate your fans, coffee-maker, humidifiers, and crock-pots.

With a little imagination, you can adapt other electronic devices that will let you water plants, control green houses, and of course, make use of audio cassette decks with 'timer ready' switches.

And, if you own a second home, now you can activate pipe heaters if there's an early frost, or 'switch on' the house so it's warm or cool and lit when you arrive.

QUITE A SYSTEM

As you get into bed tonight, think about what you'd do if you heard a noise outside or downstairs. Just push a button.

Think about how nice dimmed lights would be in your bedroom or living room. If you're at all like me, you'll love all the 'plug-in' things you can do with X10.

19⁹⁰ COMPUTER CONTROL TOO

It's amazing. Look at your computer screen. Pick a lamp anywhere in your home and touch a button. Both the lamp on the screen and the 'real' lamp will jump to life. And, it's yours for just \$19⁹⁰.

You can choose 10% to 100% intensity. And, not only can you turn anything you choose 'on' or 'off' right now, you can program the device to come 'on' or turn 'off' multiple times today, tomorrow, or any day(s) you wish during the week. **USE YOUR COMPUTER-DON'T LOSE IT**

What's really neat is that you can operate the system directly from your computer, but you store all your programmed instructions in X10's 80C48 microprocessor based Control Center.

And look at this. The Control Center instantly connects and disconnects from your computer without tying it up.

The control center has battery back up (9V battery not included), and you can back up all your stored commands on the copyable X10 master disk.

So, not only is your programming protected, but you can store summer, winter, and vacation schedules on disk.

In fact, although the included software supports at least 95 devices (minimum, depending upon which computer you own), you'll have access to 256 command capabilities. So, you can program anything you like. Imagine all the excit-

ing things you can program your computer to do. Wow!

FULLY COMPATIBLE

DAK has over 70,000 customers with X10 systems. The standard modules that you already own are 100% compatible. So, for \$19⁹⁰, how can you go wrong?

How is it done? Well, your computer tells the Command Center what you want done. The Command Center then sends a silent encoded signal throughout your home's electrical system.

If it says, "Number 7 module turn on to 40%", only number 7 will respond. Of course, groups of modules can be controlled and you can assign several lights, such as outside flood lights, to the same number. It's all easy. It's all flexible.

BACK TO THE ACTION

OK, you're sitting at your Commodore or Apple IIE or IIC Computer. You'll see pictures of a variety of rooms. Just tell your computer what types of devices you'd like to control.



Whenever you would like to place a lamp or appliance, just choose one from a screen like the one shown above. These pictures, or ICONS as they are called in computerese, will appear. There are many types of devices to choose from.

If you were at your IBM PC you'd see text. (You can even control your whole office or factory.) If you were at your Macintosh, you can draw your own rooms, even using Macpaint. Wow!

So, with Command Consoles or with your computer, or with both, you'll have control never before possible of electrical devices in your home or office.

Wait till you feel the power of your computer surging through your home. A security mode can make your lights come on and off at random times for security. You can even manually control 8 devices

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All Command Consoles, Modules and Computer Interfaces are backed by X10's standard limited warranty.

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9)Most IBM PCs & Clones have a serial port, so X10 should simply plug in. Use Order No. 4410.

10)For your Macintosh, the X10 simply plugs in. Use Order No. 4411.

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Discs and tapes reviewed by
Robert Ackart
Richard Freed
David Hall
Stoddard Lincoln

BACH: *Trio Sonata in C Minor (BWV 1079); Trio Sonata in C Major (BWV 1037); Sonata in C Major (BWV 529); Sonata in G Major (BWV 530)*. Aurèle Nicolet (flute); Kolja Blacher (violin); Michio Kobayashi (harpsichord); Mari Fujiwara (cello). DENON © 33C37-7953 no list price.

Performance: *Elegant*
 Recording: *Fine*

BACH: *Suite in E Minor (BWV 996); Suite in A Minor (BWV 997); Sonata in E-flat Major (BWV 525); Sonata in C Major (BWV 529)*. Julian Bream (guitar); George Malcolm (harpsichord). RCA © RCD1-5841 no list price.

Performance: *Suave*
 Recording: *Very good*

Both Julian Bream and Aurèle Nicolet have dipped into Bach's organ sonatas to supplement the repertoires of their respective instruments. Written like trio sonatas, with a treble voice for each hand and a bass line for the feet, they work beautifully with the harpsichord taking one treble voice and the bass and the second treble voice consigned to another instrument, Nicolet's flute on the Denon disc and Bream's guitar on the RCA album. The performances of both pairs of transcriptions are excellent in their absolute clarity of line and balance.

Bream finishes off his album with smoldering readings of the Lute Suites in E Minor and A Minor. The latter is an especially fine work, and his is an especially fine performance. Nicolet fills out his recital with the magnificent Trio Sonata from the *Musical Offering* and the C Major Trio Sonata now generally thought to be by Bach's pupil Johann Gottlieb Goldberg. Nicolet is a very thoughtful flutist and, unlike many of his colleagues, never plays for sheer brilliance. His contemplative performances give this music the depth that it calls for and rarely gets. *S.L.*

BARBER: *Violin Concerto, Op. 14; Vanessa, Prelude and Intermezzo; The School for Scandal, Overture, Op. 5;*

EXPLANATION OF SYMBOLS:

- Ⓛ = DIGITAL-MASTER ANALOG LP
- Ⓢ = STEREO CASSETTE
- Ⓢ = DIGITAL COMPACT DISC
- Ⓜ = MONOPHONIC RECORDING

MAHLER'S SCHUBERT

TOSCANINI, Furtwängler, Mitropoulos, Bernstein, and several other conductors have performed Beethoven quartets in settings for string orchestra. Mahler, too, produced his own such arrangement of Beethoven's F Minor Quartet, Op. 95, but his similar amplification of Schubert's most beloved quartet, the one in D Minor called *Death and the Maiden*, came earlier. Now it has entered the catalog in a stunning recording for Angel by Jeffrey Tate and the English Chamber Orchestra.

Apparently Mahler never actually performed more than the slow movement of the quartet, which he conducted in Hamburg in November 1894. Gilbert Kaplan, the magazine publisher who conducted performances of Mahler's Second Symphony a few years ago, commissioned a performing edition of Mahler's arrangement of the entire quartet, a commission fulfilled by David Matthews and the Mahler biographer Donald Mitchell, working from indications in Mahler's own copy of the published score of the Schubert original. This version was introduced by Moshe Atzmon and the American Symphony Orchestra in May 1984. Tate and the ECO gave the English première thirteen months later.

Naturally, a composer of Mahler's imaginativeness would not be content merely to "amplify" or "expand" what Schubert wrote. He made the changes he felt necessary to exploit what he recognized as the quartet's potentialities for a medium not only larger but *different*, the string *orchestra*. The result is a somewhat different piece, with as much Mahler in it as Schubert, perhaps, but one that powerfully conveys the Schubertian essence. The poignancy and drama are intensified, the contrasts sharpened, and yet the intimacy is not lessened. How otherworldly the slow movement is! And what a remarkable performance this is in every respect, persuading us of the validity of the transcription—not as an "improve-



Conductor Jeffrey Tate

ment" on the original, or a substitute for it, but as an intriguing appendix, the creation of one intense musical genius filtered through the re-creative mind of another.

The performance is preceded in the recording by the song on which that otherworldly slow movement was based and from which much of the quartet's character was absorbed. Ann Murray sings it most affectingly, and Tate's piano accompaniment is as apt as his conducting of the big piece. The recording itself is exemplary in both its richness and its clarity. *Richard Freed*

SCHUBERT (arr. Mahler): *Quartet No. 14, in D Minor (D. 810, "Death and the Maiden")*. English Chamber Orchestra. Jeffrey Tate cond. ***Der Tod und das Mädchen (D. 531)***. Ann Murray (mezzo-soprano); Jeffrey Tate (piano). ANGEL ● DS-38313 \$11.98, © 4DS-38313 \$11.98. © CDC-47354 no list price.

Second Essay for Orchestra, Op. 17. Joseph Silverstein (violin); Utah Symphony Orchestra, Charles Ketcham and Joseph Silverstein cond. PRO ARTE © CDD 241 no list price.

Performance: *Variable*
 Recording: *Good*

At first glance, the first CD release of these works by Samuel Barber appears to be a very attractive package. The promise is reasonably fulfilled in Joseph Silverstein's elegant, if small-scaled, solo work in the Violin Concerto, with its beguilingly lyrical first

two movements and virtuosic *moto perpetuo* finale. The Utah Symphony under associate conductor Charles Ketcham provides able backing.

When Silverstein takes over the baton himself for the other three pieces, however, the results are disappointing. The ebullient *School for Scandal* Overture, which Barber composed as his graduation piece from the Curtis Institute, is handled far too cautiously here, and while the *Vanessa* music goes well enough, the entire opening slow section of the *Second Essay* is badly lacking in tension. Only with the start of the fugal

development does the piece get off the ground, working its way to an impassioned peroration that Silverstein brings off in generally convincing fashion. The sonics are clean, wide-ranging, and well balanced. *D.H.*

BEETHOVEN: *Symphony No. 1, in C Major, Op. 21; Symphony No. 2, in D Major, Op. 36.* Berlin Philharmonic Orchestra, Herbert von Karajan cond. DEUTSCHE GRAMMOPHON 415 505-1 \$10.98, 415 505-4 \$10.98, 415 505-2 no list price.

Performance: *Very good*
Recording: *Very good*

Herbert von Karajan's new cycle of the Beethoven symphonies is nearing completion. While I have not been overly happy with the series so far, particularly in comparison with his 1977 cycle (also on Deutsche Grammophon), this release of the first two symphonies proves a welcome exception. On CD, the sound is richer, cleaner, and better balanced than I have found to be typical of the five previously issued symphonies.

Interpretively, the First Symphony is the prize here. The opening movement is treated expansively, with care for the inner details never being allowed to detract from the big line and its cumulative impact. The slow movement is elegantly done, with careful observation of Beethoven's *con moto* indication. The minuetto is on the deliberate side, but not disconcertingly so, and the finale has the same big scale as the first movement. In short, this is a big-orchestra rendition, but a very convincing one, with the Berlin Philharmonic in top form.

Karajan observes the exposition repeat in the First Symphony, but he omits it in the Second. He takes the first movement in fiery *brioso* fashion, and the *largetto* gets a thoroughly refined performance, though with no lingering along the way. A bit more impetuosity might have been welcome in the scherzo, but the finale goes at the same brisk pace as the main body of the opening movement. Overall, I'm not quite as taken with this performance as I am with that of the First Symphony, and while the sound here too is rich and clean, the winds are a bit more recessed. Nonetheless, this is a recording for anyone who likes his early Beethoven strong and meaty. *D.H.*

BEETHOVEN: *Symphony No. 3, in E-flat Major, Op. 55 ("Eroica").* Symphony Orchestra of the North German Radio, Hamburg, Günter Wand cond. ANGEL 47589-2 no list price.

Performance: *Scrupulous*
Recording: *Spacious*

Günter Wand was first represented in the Schwann catalog in the early Fifties, with some Urania releases, and in recent years his Bruckner symphony series with the Cologne Radio Orchestra, portions of which were released here on Pro Arte, received high critical praise.



Alexis Weissenberg: crisp Debussy

Since 1982, he has been chief conductor of the North German Radio (NDR) Symphony Orchestra in Hamburg, and his recordings with that ensemble, issued in Europe on Germany's Harmonia Mundi label, are being released in the U.S. on CD only by Angel.

This *Eroica* by Wand and his Hamburg orchestra is not the most exciting I have ever heard, but it has a marvelous continuity of line and rhythmic flow, and within the context of modern orchestral performance it is utterly scrupulous in its attention to Beethoven's tempos, dynamics, and details of scoring. The most striking instance is the peroration of the opening movement, where it is customary to give the trumpets their head with the final statement of the main theme. Sticking to the letter of the score, Wand chooses to keep the trumpets in their place.

The recorded sound is spacious in ambience and airy in texture, though I would have preferred slightly closer miking for more sonic impact. *D.H.*

BRAHMS: *Symphony No. 4, in E Minor, Op. 98.* Symphony Orchestra of the North German Radio, Hamburg, Günter Wand cond. ANGEL 47589-2 no list price.

Performance: *Lovely*
Recording: *Very good*

I find Günter Wand's emphasis on organic linear flow and lovingly delineated texture more to the point in the Brahms Fourth than in the Beethoven *Eroica*. His performance communicates to an exceptional degree the plangent beauty of this last of the four Brahms symphonies, reaching a true apogee in the mighty finale. There have been

more heaven-storming realizations of the Brahms Fourth than this one but very few of such loveliness. Whereas the sonics for the *Eroica* seemed a bit pallid relative to the dramatic transients of the score, in the Brahms recording, where smooth flow and rich sonority are everything, the sound is just right. A highly satisfying production! *D.H.*

CHOPIN: *Piano Sonata No. 2, in B-flat Minor, Op. 35; Piano Sonata No. 3, in B Minor, Op. 58.* Maurizio Pollini (piano). DEUTSCHE GRAMMOPHON 415 346-1 \$10.98, 415 346-4 \$10.98, 415 346-2 no list price.

Performance: *Elegant*
Recording: *Limpid*

Maurizio Pollini's Chopin has always been especially distinguished, and his new pairing of the two big sonatas is so altogether compelling in its own right that comparisons become rather beside the point. If his approach has been cooler than, say, Rubinstein's or Ashkenazy's, he has nevertheless always conveyed the most profound affection for the music on his own aristocratic terms. A somewhat greater sense of intimacy, perhaps, is suggested in the Second Sonata by Emanuel Ax on RCA and Andrei Gavrilov on Angel, and the late Emil Gilels brought a unique quality to the Third in his unaccountably deleted recording for DG. But Pollini, with his unfailing sense of momentum and never less than beautiful tone, achieves an elegant balance of poetry and power, and his piano is handsomely recorded. If it's a coupling of the two sonatas you want, look no farther. *R.F.*

CIMAROSA: *Concertante in G Major for Flute and Oboe* (see SALIERI)

DEBUSSY: *Suite bergamasque; Children's Corner Suite; Estampes; L'Isle joyeuse; La Fille aux cheveux de lin; La plus que lente; Etude pour les arpèges.* Alexis Weissenberg (piano). DEUTSCHE GRAMMOPHON 415 510-1 \$10.98, 415 510-4 \$10.98, 415 510-2 no list price.

Performance: *Crisp*
Recording: *Fine*

Many pianists seem to feel it necessary to "interpret" Debussy, playing around with pedal effects and messing with the tempos. But Alexis Weissenberg simply plays the music cleanly and crisply as it is written. His almost Mozartian approach is perfect for these works, and, as recorded here, the music has a satisfying freshness. The album is a thorough delight. *S.L.*

DONIZETTI: *L'elisir d'amore.* Katia Ricciarelli (soprano), Adina; José Carreras (tenor), Nemorino; Leo Nucci (baritone), Belcore; Domenico Trimarchi (baritone), Dulcamara; Susanna Rigacci (soprano), Giannetta. Chorus and Symphony Orchestra of Radio Turin, Claudio Scimone cond. PHILIPS 412 714-1 two discs \$19.96, 412 714-4 two

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cassettes \$19.96, © 412 714-2 two CD's no list price.

Performance: *Satisfactory*
Recording: *Very good*

The principal attraction of this latest recording of Donizetti's comedy is that the CD version lets you hear each of the two acts without interruption. Moreover, the sound is fine—clear, balanced, and incisively “present.”

It's good that Katia Ricciarelli seems to have abandoned such heavier roles as *Aïda* or *Don Carlo's* Elisabeth for a lighter repertoire. When not pushed, her voice is clear, limpid, and capable of accurate coloratura. She sings well here and sounds very much at home in her role. José Carreras, too, sounds better than on other recent opera recordings, with considerably less forcing at the top and a commensurately stronger feeling for line. Leo Nucci's Belcore is vocally rich if not especially subtle, and Domenico Trimarchi is musically competent as the blustering Dulcamara.

And yet the total performance, even with Claudio Scimone's expert conducting and the schooled singing of the chorus, lacks the sense of fun and the bounciness of the recently released RCA set made in 1982 with Lucia Popp, Peter Dvorský, Bernd Weikl, and Evgeny Nesterenko under Heinz Wallberg's direction. I must admit to a certain dispassion for *L'elisir* despite its lovely score, but listening to the earlier recording, I found myself caught up in the music and enjoying the comedy more than ever before.

While the Philips set is proficient, musically tasteful, and very well recorded, it somehow lacks the festive sparkle that makes the RCA version so winning. R.A.

ELGAR: *Symphony No. 1, in A-flat Major, Op. 55.* Royal Philharmonic Orchestra, André Previn cond. PHILIPS ● 416 612-1 \$10.98, © 416 612-4 \$10.98, © 416 612-2 no list price.

Performance: *Deeply moving*
Recording: *First-rate*

Strange that Elgar's First Symphony bears the same opus number as Beethoven's *Eroica*, for in its own distinctive fashion the Elgar is also a heroic score. It has not suffered from a lack of distinguished recorded performances, beginning with Elgar's own in 1930 and extending through later ones by Boult, Barbirolli, and Solti. Bernard Haitink's 1984 Angel recording with the Philharmonia Orchestra has its points, too, although I take exception to his very solemn basic tempo at the opening.

From the very first bars of André Previn's performance, however, you can breathe a sigh of rich satisfaction along with the thought, “Ah! He's really got it right!” And that holds throughout the richly complex main body of the first movement, the savage patrol march that passes for a scherzo, the poignant slow movement, and the turbulent finale with its *nobilmente* theme strug-



Sir Colin Davis: darkened *Fauré*

gling to break into the clear, which it finally does.

Humanity and compassion are the hallmarks of Previn's interpretation, yet there is no wallowing in sentimentality—an easy pitfall in the slow movement, which is handled here with the utmost tenderness and finesse. Digital technology is, of course, a godsend, allowing a recorded realization of the full dynamic range and rich textures of a score that can sound clotted in the hands of one less skillful. Highly recommended. D.H.

FAURÉ: *Requiem, Op. 48.* Lucia Popp (soprano); Simon Estes (bass); Leipzig Radio Chorus; Dresden State Orchestra, Sir Colin Davis cond. PHILIPS ● 412 743-1 \$10.98, © 412 743-4 \$10.98, © 412-743-2 no list price.

Performance: *Dark, weighty*
Recording: *Good*

Fauré used such terms as “small,” “intimate,” and “sweet” to describe his Requiem, but that must have been before he produced the third and biggest version of the work, which he prepared (or may have allowed an amanuensis to prepare) under pressure from his publisher. Until quite recently it was the only version in print and, of course, the one invariably performed and recorded. Now John Rutter has published an edition based on Fauré's original, small-scaled version, and he has also recorded it. Several other conductors, while using the full orchestra of the 1900 score, have made some effort toward preserving the intimacy and sweetness of Fauré's original concept.

Sir Colin Davis seems to regard the 1900 version as a different sort of Requiem from the one Fauré composed in 1885, and for his new recording of the later version he chose a bass soloist with a particularly huge voice in place of the light baritone Fauré indicated. The tempos are deliberate, the overall coloring unusually dark, but the *weight* Davis brings to the work does ensure

that momentum is sustained. Lucia Popp, however, sounds rather less comfortable in her brief solo in the “*Pie Jesu*” here than in her earlier recording of the work with Andrew Davis. This time the effect is not merely one of chaste stillness but of static inertia.

The choral voices, which ought to provide the work's brightness, simply underscore the tenebral quality of Sir Colin's approach, in which charm has been resolutely expunged in favor of unrelieved devoutness. If you accept his implied premise—that this is a work of deliberately large proportions and great solemnity—you will find this a beautifully executed realization, and the darkish sonics will seem quite appropriate. Personally, I favor a brighter approach. Moreover, even at the length to which Sir Colin extends the Requiem, it's still shortweight for a CD. R.F.

FRANCK: *Les Béatitudes.* Elisabeth Brasseur Chorale; Petits Chanteurs de Chaillot; L'Académie Symphonique de Paris, Jean Allain cond. CHARLIN © CL 3/4-2 two CD's no list price.

Performance: *Sumptuous*
Recording: *Sonorous*

If any composer deliberately sought the exalted it was César Franck, and his greatest effort was surely *Les Béatitudes*. However ponderous parts of this monumental work are, there are also many moments of pure exaltation. The main problem is that the same degree of exaltation is sought in each of the eight *Béatitudes*, and as a result the work's several overwhelming climaxes become overbearing. The work is, nonetheless, the embodiment of French nineteenth-century Catholic mysticism and bears a very special message of its own.

In this recording under the direction of Jean Allain, 310 soloists, chorists, and instrumentalists produce a voluptuous sound. Nothing is hurried as the music unfolds in wave after wave of sumptuous, ever-changing sonorities. Among the many soloists, André Jonquères's hollow baritone is extremely effective in the part of Christ, as are the heroic tenor voices of Marcel Huybroek and Jean Brazzi at other points. The combination of superb diction and native French vocal production lend this performance a Frenchness that only the French themselves can produce. The recorded sound on CD is appropriately rich and sonorous. S.L.

HAYDN: *Missa in tempore belli* (“*Paukenmesse*”). Judith Blegen (soprano); Brigitte Fassbaender (contralto); Claes Ahnsjö (tenor); Hans Sotin (bass); Chorus and Symphony Orchestra of the Bavarian Radio, Leonard Bernstein cond. PHILIPS ● 412 734-1 \$10.98, © 412 734-4 \$10.98, © 412 734-4 no list price.

Performance: *Spacious*
Recording: *Sumptuous*

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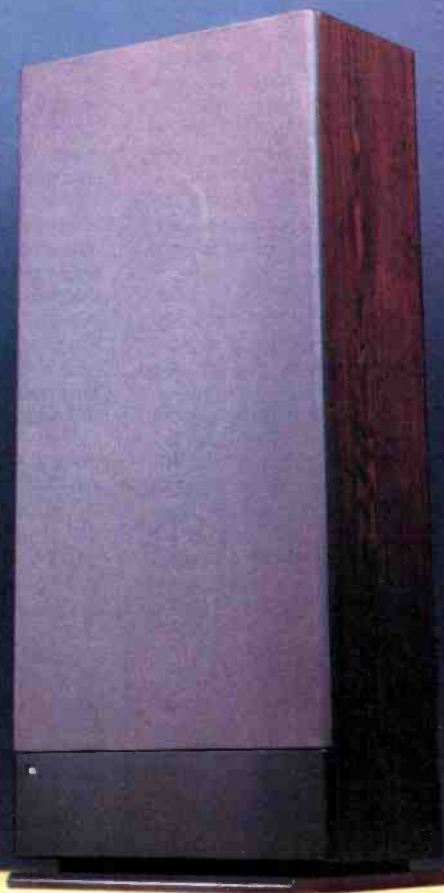
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DVORÁK'S poignantly lovely Op. 34 String Quartet has not exactly been overexposed on records in the last few years, and the combination of that work and the still more appealing Op. 51 in a new Nonesuch recording by the American Quartet is a most welcome one. The American Quartet sounds very much at home in this material, playing not only with assurance, precision, and consistently beautiful tone but with conspicuous warmth of heart and an exceptional sense of intimacy. Both qualities, of course, are quite prominent in these scores, and while the warmheartedness of the performances is never excessive, the intimacy might appear to have been achieved at the expense of a certain degree of vitality and contrast within the respective works. But there can be no disagreement at all regarding the sheer beauty of the playing, which lends weight to Nancy Miller's suggestion, in her excellent annotation, that these two quartets, rather than the celebrated Opp. 96, 105, and 106, "may well represent the composer's finest and most

characteristic contributions to the genre."

My loyalty to the twelve-LP Deutsche Grammophon set of all the Dvořák quartets played by the Prague Quartet is unaffected, but (providing you can find it in the first place) it represents a mighty big investment, possibly a bit more than most listeners feel they really want or need in the way of Dvořák quartets. The new Nonesuch issue therefore fills an important gap, and it is so beautifully played and recorded (the acoustic has a warm, dusky quality appropriate to the music) that many who love Dvořák enough to have the big DG set, or have the older Janáček Quartet recording of Op. 34 on London, will want the more caressing American Quartet performances too, for alternate listening.

Richard Freed

DVOŘÁK: String Quartet No. 9, in D Minor, Op. 34; String Quartet No. 10, in E-flat Major, Op. 51. American String Quartet. NONESUCH ● 79126-1 \$10.98, © 79126-4 \$10.98, © 79126-2 \$15.98.

Mass), the *Mass in Time of War* is one of Haydn's most splendid works. Going beyond a routine treatment of the ancient text, Haydn searched out the deepest meaning of the universal message in each movement, and the final *Agnus Dei* sums up the victory of peace in triumphant music that rivals Beethoven's *Missa Solemnis*.

Leonard Bernstein's new reading is a spacious one that allows the details of Haydn's orchestration to emerge and follows the journey through petition, contemplation, and ultimate triumph in a beautifully thought-out musical plan. The soloists are splendid both as individuals and in ensemble, though Hans Sotin is rather too sepulchral sounding

for the general blend. Splendid too are the choral and orchestral forces of the Bavarian Radio. This is a performance not to be missed.
S.L.

HAYDN: String Quartets, Op. 76, Nos. 1-6 ("Erdödy"). Tátrai Quartet. HUNGAROTON © HCD 12818-13-2 no list price.

Performance: *Splendid*
Recording: *Splendid*

Mozart was so inspired by Haydn's Op. 33 string quartets that he responded by dedicating his six finest quartets to the master. Surely Haydn's response to Mozart is found in the six magnificent so-called *Erdödy* Quartets of Op. 76, which include such masterpieces as the *Quinten* (No. 2), the *Kaiser* (No. 3), and *L'Aurore*, or *Sunrise* (No. 4).

The Tátrai Quartet is a marvelous ensemble with a warm tone, a sure sense of style, and a deep understanding of the many contrasting elements found in Haydn's Op. 76. It is the rare string ensemble that can bring off equally well the delicacy of the opening of the *Sunrise* and the peasant gruffness of the first movement of the *Kaiser*, and switch immediately to the almost Masonic second movement. The Tátrai also understands the sparseness of the *Quinten* and is able to contrast the lyricism of the second and the wit of the fourth movements of the D Major (No. 5). The players are always in complete control, and they bring depth and feeling to all of these wonderful pieces.
S.L.

HOVHANESS: Symphony No. 11 ("All Men Are Brothers"). Royal Philharmonic Orchestra, Alan Hovhaness cond. *Armenian Rhapsody No. 1; Prayer of Saint Gregory; Tzaikerk.* Thomas Stevens (trumpet, in *Prayer*); Eudice Shapiro (violin, in *Tzaikerk*); Gretel Shanley (flute, in *Tzaikerk*); Crystal Chamber Orchestra, Ernest Gold cond. CRYSTAL © CD801 \$16.95.

HOVHANESS: Symphony No. 9, Op. 180 ("Saint Vartan"). National Philharmonic Orchestra of London, Alan Hovhaness cond. *Concerto for Horn and String Orchestra, Op. 78 ("Artik").* Meir Ramon (horn); Israel Philharmonic Orchestra, David Amos cond. CRYSTAL © CD802 \$16.95.

Performances: *Definitive*
Recordings: *Very good*

A surprising amount of offbeat repertoire has already found its way onto CD's, and these collections of music by the prolific but little-known American composer Alan Hovhaness (b. 1911) should be welcome discoveries for many. While Hovhaness has assimilated a host of influences, from the folk tunes of his Armenian ancestry to the modal and polymodal music of the Renaissance to the unusual rhythms and sonorities of the classical music of India and Japan, his best music has a unique tang. There is nothing else quite like it,

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Conductor Giuseppe Sinopoli: idiosyncratic, perhaps, but never dull

and beyond the aesthetic dimension, most of his work shows a deeply serious religious and mystical impulse. His best-known and probably greatest work is *Mysterious Mountain* of 1955, which Fritz Reiner, not known as a new-music champion, recorded with the Chicago Symphony for RCA (the superb sound makes it a good candidate for CD reissue).

The Eleventh Symphony (1960), scored for full modern orchestra, is fairly conventional in form, though many of the sonorities are anything but Western. The material of the three movements stems from quite different periods in Hovhaness's career and is uneven in quality. The first movement might be dismissed as warmed-over Wagner, but the second has a delightful, exotic energy, and the third is full of gorgeous gestures. The three short accompanying pieces are all grateful to the ear, with *Tzaikerk*, which translates as *Evening Song*, making perhaps the strongest impression.

The *Saint Vartan* Symphony, No. 9, though cast in twenty-four brief movements, is more unified stylistically than No. 11 and ultimately more satisfying, but it is also less accessible to a first-time listener. The first few sections, especially, sound downright weird on first hearing. The *Artik* Concerto, however, is an easy-to-like essay that presents the horn as a singing, not a declamatory, instrument.

All the performances are excellent, and the recordings, ranging in vintage from 1970 to 1982, have been very competently remastered for CD.

David Stein

LISZT: *Via crucis* (see *Best of the Month*, page 112)

MAHLER: *Symphony No. 2, in C Minor* ("Resurrection"); *Lieder eines fahrenden Gesellen*; *Six Early Songs*. Rosalind Plowright (soprano); Brigitte Fassbaender (mezzo-soprano); Bernd Weikl (baritone); Philharmonia Chorus and Orchestra, Giuseppe Sinopoli cond.

DEUTSCHE GRAMMOPHON ● 415 959-1 two discs (without the *Six Early Songs*) \$19.96, © 415 959-4 two cassettes \$19.96, © 415 959-2 two CD's no list price.

Performance: *Songs fare better*
Recording: *Good to excellent*

Giuseppe Sinopoli's recorded performances over the last few years have been idiosyncratic at times but certainly never dull, and the orchestral support he provides in the songs recorded here is vivid and extremely sympathetic. The *Six Early Songs* that open the program on CD and tape (they were released earlier on LP together with Sinopoli's recording of Mahler's Fifth Symphony) are culled from the three sets composed for voice and piano during the 1880's; the orchestrations used here are by Harold Byrns. As with all of Mahler's songs, they are telling vignettes, from the macabre *Zu Strassburg auf der Schanz* and the mock-humorous *Selbstgefühl* to the achingly poignant *Nicht wiedersehen*. They are all sung to perfection by baritone Bernd Weikl, whose strong, flexible delivery is enhanced by flawless enunciation.

Mezzo-soprano Brigitte Fassbaender is only a shade less satisfactory in the four *Lieder eines fahrenden Gesellen*. She gets off to a good start but exhibits some straining at the top in the second song. She's at her best, however, in the dramatic outburst that opens *Ich hab' ein glühend Messer*, the third song in the cycle. The recorded sound is near perfection.

The performance of the *Resurrection* Symphony is considerably more of a mixed bag. Yet this is the first recording of it I've encountered that enables one to hear the scherzo movement, the *Urlicht* vocal solo, and the finale uninterrupted, as Mahler intended, since they succeed one another without a break on the second CD (the first two movements fill out the first CD).

In the opening movement Sinopoli seems to have tried for a compromise between the solemnly funereal ap-

proach of Bruno Walter and the urgently Faustian one of Otto Klemperer. The overall effect is of a competent run-through at a fairly fast tempo, endowed with neither passion nor genuine dedication. The church-acoustic recording sounds just a shade out of focus, with the cymbals decidedly off-mike at points where they really need to be heard. While the second movement is nicely paced and played, the scherzo, taken at an unusually moderate pace, carries with it none of the sarcasm and bitterness inherent in its pages. Fassbaender does well with the lovely *Urlicht*, but she certainly does not efface memories of Dame Janet Baker in the Bernstein recording.

The gigantic end-of-the-world finale opens most impressively, and in general its whole introductory section comes off well, including the superbly recorded and sung choral entry. From this point until the end, however, matters take a somewhat varied course, the slow parts faring better than the fast and turbulent episodes, in which the orchestral playing sounds to me somewhat tired. By and large, it is the excellent Philharmonia Chorus that saves the day, especially in the last pages. Overall, then, I'd say this was a disappointing production but I'd like to see the songs come out on a separate CD, perhaps along with the later *Wunderhorn* songs in Mahler's own orchestral settings. D.H.

MAHLER: *Symphony No. 6, in A Minor*. London Symphony Orchestra, James Levine cond. RCA © RCD2-3213 two CD's no list price.

Performance: *Outstanding*
Recording: *Excellent*

James Levine's eloquent performance of Mahler's Sixth Symphony, issued on LP seven years ago (RCA ARL2-3213), strikes me as the finest single segment of his still uncompleted survey of the symphonies for RCA. He certainly had the London Symphony at the top of its form, and the fine analog recording sounds better than new in this especially successful transfer to CD. Eighty-one minutes is an awkward length for this medium—a few minutes too long for a single CD, a little skimpy for two—and some of the other CD sets of this work include Mahler songs or other additional material. But, taking both musical and sonic factors into consideration, I don't think any of the other CD versions adds up to the level of persuasiveness found in this one. R.F.

PROKOFIEV: *Piano Concerto No. 3, in C Major, Op. 26*. TCHAIKOVSKY: *Piano Concerto No. 1, in B-flat Minor, Op. 23*. Jon Kimura Parker (piano); Royal Philharmonic Orchestra, André Previn cond. TELARC © CD-80124 no list price.

Performance: *Underanimated*
Recording: *Sumptuous*

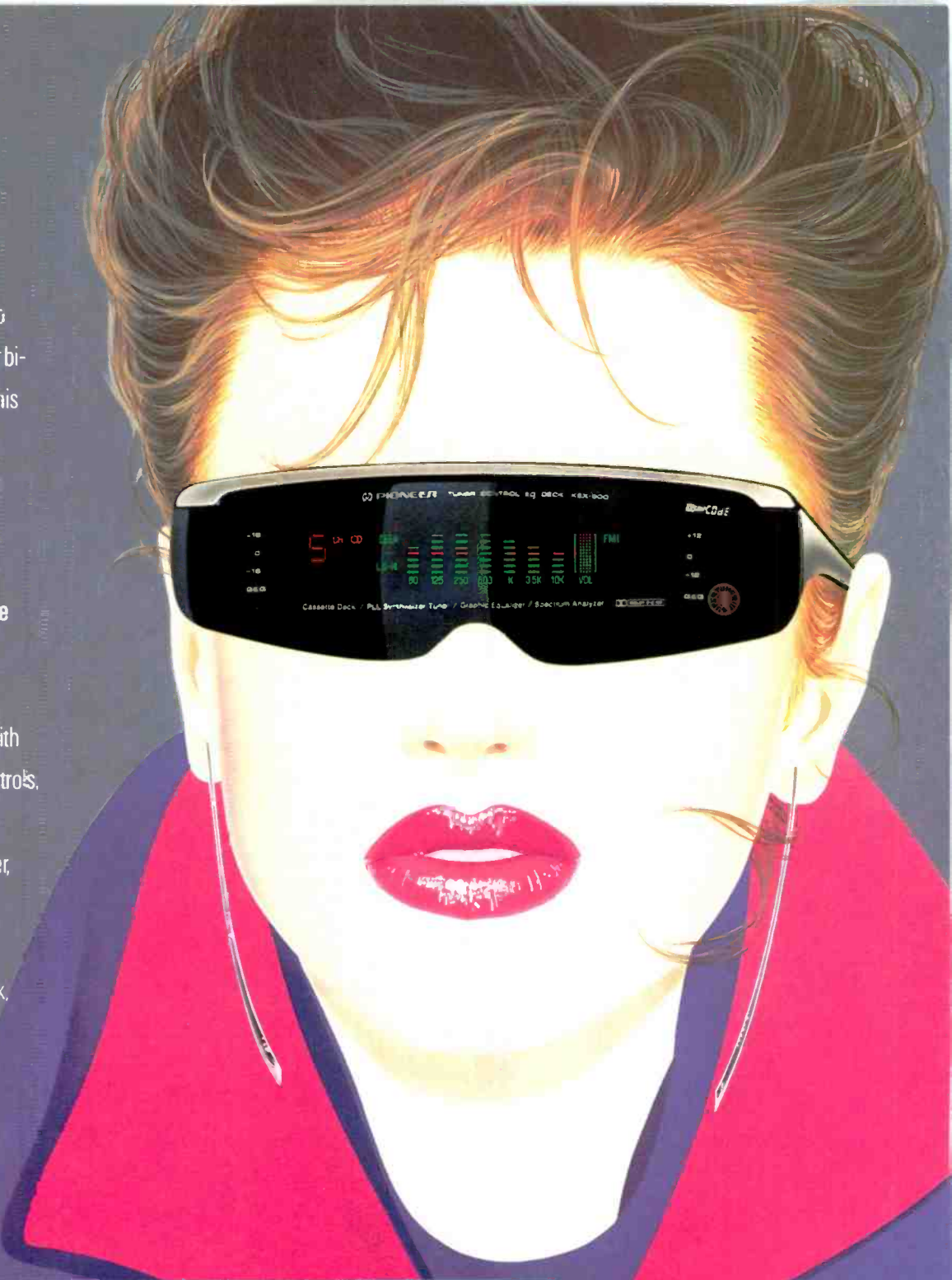
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Rhapsody on a Theme of Paganini, Op. 43. Tedd Joselson (piano); Philharmonia Hungarica, Zoltán Rozsnyai cond. PERPETUA © PR 7006 no list price.

Performance: *Good solo work*
Recording: *Lackluster*

Jon Kimura Parker has a terrific technique and a gift for investing every phrase with real beauty. He and André Previn work well together, and the orchestra is very much in the picture in Telarc's sumptuous recording. For all the beautiful playing and beautiful sound, though, their performances of

both the Tchaikovsky Concerto No. 1 and the Prokofiev Third fail to come to life. One may welcome an approach to these works in which the customary fireworks are minimized in favor of the music's lyric expressiveness, but one does want a sense of momentum. This Telarc release comes up directly against Deutsche Grammophon's stunning CD repackaging of the same two concertos played by Martha Argerich—with the same orchestra, under Charles Dutoit, in the Tchaikovsky and the Berlin Philharmonic under Claudio Abbado in the Prokofiev. Curiously, while Parker adds

only about a minute to Argerich's playing time for the Tchaikovsky, but more than four minutes for the Prokofiev, it is his Tchaikovsky in particular that seems underanimated. The Prokofiev sustains the broad approach more comfortably, but neither of these performances commands one's attention the way Argerich and her associates do.

Tedd Joselson's identification with the music of Prokofiev was emphasized in his late-Seventies recordings for RCA, among them a fine one of the Third Concerto with Eduardo Mata and the Dallas Symphony Orchestra, so I was happy to see him extending his discography with a remake of a work to which he is so obviously well suited. In the event, it does not seem to be his fault that the Perpetua issue is not very competitive. Both the orchestral playing and the recording itself, in which the orchestra is too distant much of the time, are rather lackluster, barely more than hinting at either the pungency or the opulence of these fascinating scores. I hope to hear more from Joselson as well as from Parker, but this issue only reinforces my enthusiasm for the Argerich/Abbado Prokofiev. As for the Rachmaninoff, the vintage Rubinstein/Reiner is a knock out on CD, though listeners who put sonic considerations uppermost may prefer the new Ashkenazy/Haitink on London, which is coupled with Rachmaninoff's Third Piano Concerto. *R.F.*

RACHMANINOFF: *Rhapsody on a Theme of Paganini, Op. 43* (see PROKOFIEV)

RESPIGHI: *Belkis, Queen of Sheba, Suite; Metamorphoseon.* Philharmonia Orchestra, Geoffrey Simon cond. CHANDOS ● ABRD 1142 \$12.98. © ABTD 1142 \$12.98, © CD 8405 \$18.

Performance: *Persuasive*
Recording: *Demo quality*

The addition of two more or less forgotten Respighi titles to that composer's discography is very welcome. The two prominent sides of Respighi's work—the big, gaudy orchestral spectacles and the exquisite pieces based on the various forms of early music that held such productive fascination for him—only occasionally came together, as they did, for example, in the *Concerto gregorian* and here, in the *Metamorphoseon*, whose very title prepares us for such treatment. This is a very substantial set of twelve variations, some as short as a half-minute, others relatively extended, that constitutes a sort of concerto for orchestra. (It was, in fact, among the several works commissioned for the Boston Symphony Orchestra's fiftieth anniversary in 1931.) It shares certain features with Britten's Purcell Variations (the *Young Person's Guide to the Orchestra*), but it has others no less conspicuously in common with Elgar's *Enigma* Variations. Respighi's score, which, like Elgar's but not Britten's, includes an organ, is less ingratiatingly



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tuneful than either of the English works, but its pervasive grandeur and well-calculated climaxes are quite convincing in Geoffrey Simon's obviously dedicated, enormously skillful realization.

The concert suite from Respighi's longish ballet (also from 1931) about the Queen of Sheba's visit to King Solomon was concocted, annotator Edward Johnson assures us, with the same sort of serious research into ancient sources that went into Respighi's less garish undertakings, but the result is sheer, unbridled indulgence in the most voluptuous and explosive rhythms and colors an experienced master of the modern orchestra could conceive. It is not Respighi at his best, perhaps, but it can be fun to wallow in the sumptuousness and glitter and sheer glorious noise of it all. And if it sounds like the apotheosis of the Great Hollywood Biblical Epic Film Score, well, Respighi not only did it first, he did it best.

Neither of these scores is likely to receive a more persuasive performance. Geoffrey Simon and the Philharmonia Orchestra seem to be having the time of their lives, and the sound quality is quite exceptional, perhaps even a notch above the heady standard Chandos has already set for itself. It's hard to imagine the CD, which I have not heard, surpassing the vividness of this LP. *R.F.*

SALIERI: *Concerto in C Major for Flute and Oboe*. **CIMAROSA:** *Concertante in G Major for Flute and Oboe*. **STAMITZ:** *Concerto in G Major for Flute and Oboe*. Aurèle Nicolet (flute); Heinz Holliger (oboe); Academy of St. Martin-in-the-Fields, Kenneth Sillito cond. PHILIPS ● 416 359-1 \$10.98, © 416 359-4 \$10.98, © 416 359-2 no list price.

Performance: *Sparkling*
Recording: *Ditto*

It's ironic that Salieri should be given top billing in the cover art on this album. Of the three concertos, his is the weakest—a rather spiny and stingy work—while those of Stamitz and Cimarosa display the full elegance and wit of the Classical language. The combination of flute and oboe is a little like oil and water in that there is never a true blend (the Cimarosa, in fact, was originally for two flutes), but the problem is solved in most cases by the sensitivity that Aurèle Nicolet and Heinz Holliger bring to these works. The performances are sparkling, the music delightful. Anyone buying this recording is in for a treat. *S.L.*

SCHUBERT: *Schwanengesang (D. 957)*. Håkan Hagegård (baritone); Emanuel Ax (piano). RCA ● ARC1-5476 \$12.98, © ARE1-5476 \$12.98, © RCD1-5476 no list price.

Performance: *Compelling*
Recording: *Excellent*

Håkan Hagegård's recording of Schubert's *Die Winterreise* was one of several interesting but less than irresistible



Leonard Slatkin: vigorous Vivaldi

recordings of that cycle to appear in the last few years. His new *Schwanengesang*, though, is in quite a different class, and it is an exalted one. There is an assuring indication of what to expect in the first phrase of the opening *Liebesbotschaft*, and from that song through *Die Taubenpost*, the last of the fourteen that make up Schubert's valedictory collection, Hagegård proceeds from strength to strength, with a wonderful sense of give-and-take between him and pianist Emanuel Ax, whose accompaniments here are among the most beautiful things he has committed to discs.

Underlying the sheer beauty of the singing and playing here is a sense of total identification with the material that goes beyond mere "authority." Dietrich Fischer-Dieskau's singing of *Der Doppelgänger*, even in his latest recording (the one with Alfred Brendel), remains incomparable, and Gérard Souzay, in what may have been his first recording with Dalton Baldwin, more than thirty years ago on London/Decca, brought a very special air to the *Abschied* that would be as hard to define as to re-create. But I suspect that what Hagegård and Ax have given us now will become a new standard of reference for a generation or two. The recording itself is equally flattering to the voice and the piano, and the balance could hardly be better. The documentation includes exceptional notes by Brian Large as well as full texts with Philip L. Miller's sympathetic translations of the song cycle. *R.F.*

SCHUBERT: *Symphony No. 2, in B-flat Major (D. 125); Symphony No. 8, in B Minor ("Unfinished," D. 759)*. Berlin Philharmonic, Daniel Barenboim cond. CBS ● IM 39676, © IMT 39676, © MK 39676 no list price.

Performance: *Strong*
Recording: *Fine*

Nothing could provide a more startling contrast with Schubert's airy Second

Symphony than his tragic *Unfinished*. Daniel Barenboim is equally at home with both, and he delivers a sparkling account of the former and a spacious reading of the latter. As recorded here, however, the sound of the Berlin Philharmonic is appropriate for the murky textures of the *Unfinished* but rather too heavy for the Second. *S.L.*

STAMITZ: *Concerto in G Major for Flute and Oboe* (see SALIERI)

TCHAIKOVSKY: *Piano Concerto No. 1, in B-flat Minor, Op. 23* (see PROKOFIEV)

VIVALDI: *The Four Seasons*. José-Luis Garcia (violin); English Chamber Orchestra, Leonard Slatkin cond. RCA ● HRC1-5827 \$10.98, © HRE1-5827 \$10.98, © RCD1-5827 no list price.

Performance: *Vigorous*
Recording: *Excellent*

It seems *de rigueur* for all violinists to record Vivaldi's *The Four Seasons* at one time or another during their careers, so here is yet another version. José-Luis Garcia and Leonard Slatkin offer a vigorous and deadly accurate performance which is exciting enough in itself. But Garcia's playing is fairly high-pressured, devoid of articulation, and absolutely unormented. The desire to point up the music's programmatic aspects is far too exaggerated (for example, the barking dog in the slow movement of *Spring* is obtrusive), and harpsichordist Anthony Halstead's attempts to compete with the violin soloist are immodest. But Vivaldi's contagious music generally survives. *S.L.*

WAGNER: *Der fliegende Holländer*. Simon Estes (baritone), Dutchman; Lisbeth Balslev (soprano), Senta; Matti Salminen (bass), Daland; Robert Schunk (tenor), Erik; Anny Schlemm (mezzo-soprano), Mary; Graham Clark (tenor), Steersman. Chorus and Orchestra of the Bayreuth Festival, Woldemar Nelsson cond. PHILIPS ● 416 300-1 three discs \$29.94, © 416 300-4 three cassettes \$29.94, © 416 300-2 two CD's no list price.

Performance: *Gripping*
Recording: *Very clear*

This live recording of Wagner's *The Flying Dutchman* is one of the more successful of its kind. There are occasional stage noises (the destruction of the Dutchman's ship sounds disconcertingly like kindling being snapped for the fireplace), but there are no audience coughs, sneezes, or interruptive bursts of applause. The splendidly sharp acoustics of the Bayreuth Festspielhaus ensure clear, live sound, and the performance, recorded in 1985, has a here-and-now theatrical intensity that studio recordings do not always evoke, infusing the drama with a powerful immediacy and taut excitement.

Simon Estes handles his big, warm baritone with musical taste and projects



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CIRCLE NO. 18 ON READER SERVICE CARD

the Dutchman's fate-ridden character with sincerity and conviction. Lisbeth Balslev's Senta is clearly and excitingly sung and finely drawn, revealing fully her half-crazed resolution, devotion, and tenderness. Matti Salminen offers a strong Daland, richly sung. Robert Schunk is particularly affecting as Erik, while the Mary and the Steersman of Anny Schlemm and Graham Clark, respectively, are first-rate. The cast's readily intelligible diction deserves special mention.

Under Woldemar Nelsson's direction, the well-trained Bayreuth chorus

and orchestra perform in exemplary fashion. Their work is crisp and spirited. The dynamics throughout are strongly marked, enhancing the high theatricality of the score. Indeed, Nelsson's contribution to the performance is one of this recording's foremost assets.

The last complete digital *Dutchman*, released by Angel about two years ago, was conducted by Herbert von Karajan, with José van Dam, Dunja Vejzovic, Kurt Moll, and Peter Hofmann singing the principal roles. It, too, is an unusually fine performance, in the somewhat relaxed, lyrical manner of Kara-

jan's recent work. Each set has much to recommend it. If you are limited to a single recording, I suggest you hear both before making up your mind. Karajan's offers perhaps a more musical experience, while Nelsson's offers, especially for a listener new to Wagner's score, a compelling encounter with the opera as a theater piece. Either of these sets will prove a valuable addition to your record library.

R.A.

Collections

KATHLEEN BATTLE AND CHRISTOPHER PARKENING: *Pleasures of Their Company*. Dowland: *Three Songs* (arr. Russ); *Two Dances* (arr. Parkening). Bach-Gounod (arr. Parkening/Russ): *Ave Maria*. Villa-Lobos: *Bachianas brasileiras No. 5, Aria*. Granados (arr. Russ): *La maja de Goya*. Henrique (arr. Russ): *Boi-Bumbá*. Ovalla (arr. Almeida): *Azulão*. Barroso (arr. Almeida): *Para niñar*. Falla (arr. Russ): *Three Spanish Folk Songs*. And six spirituals. Kathleen Battle (soprano); Christopher Parkening (guitar). ANGEL Ⓞ DS-37351 \$11.98, Ⓞ 4DS-37351 \$11.98, Ⓞ CDC-47196 no list price.

Performance: *Elegant*
Recording: *Excellent*

Occasionally a world-class conductor, such as Leonard Bernstein or James Levine, will play the piano to accompany a particularly gifted singer in the concert hall or on records. It is less usual, however, for a guitarist of Christopher Parkening's standing to perform as an accompanist, and that contributes to this album's rare and special quality.

Few singers before the public today have Kathleen Battle's poise in recital, and fewer still can produce such beautiful sound with their voices. Her superior diction serves her particularly well in the Dowland songs here, and the spirituals stand up well to her art-song approach. She is irresistible in Ovalle's *Azulão*.

The centerpiece of the album is the Villa-Lobos aria, which has been recorded by everybody from Joan Baez to Galina Vishnevskaya. In beauty of tone, Battle can risk comparison with just about anybody, and as performed here in the composer's own transcription for guitar, the piece gains a bit in intimacy. That same intimacy is even more apparent in the Bach-Gounod *Ave Maria*, which I had never heard before with guitar accompaniment.

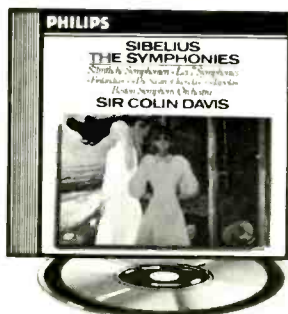
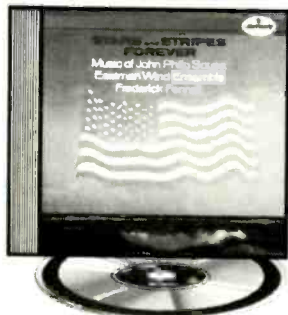
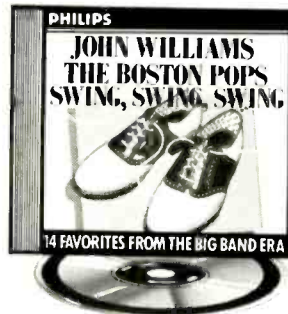
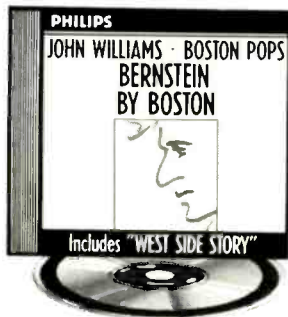
Parkening's personality is somewhat reserved, and he rather gallantly lets Battle have center stage. At times he makes a slight courtly musical gesture that hints at the traditional guitarist's serenade at a lady's window. It's very attractive.

Marked by delicacy and musicianship, this recording is a treasurable collaboration between two of America's most talented performing artists. The balance between voice and guitar is good, and the engineers have succeeded

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well in capturing the beauty of Ms. Battle's voice. *William Livingstone*

EDUARDO FERNÁNDEZ. Turina: *Homenaje a Tárrega.* Granados: *La maja de Goya.* Albéniz: *Torre bermeja; Rumbos de la caleta; Cádiz.* Torroba: *Sonatina.* Rodrigo: *Three Spanish Pieces.* Falla: *Homenaje, "Le tombeau de Claude Debussy"; The Miller's Dance.* Eduardo Fernández (guitar). LONDON Ⓞ 414 161-1 \$10.98, Ⓞ 414 161-4 \$10.98, Ⓞ 414 161-2 no list price.

Performance: *Wonderful*
Recording: *Excellent*

This well-chosen program of familiar—and some not so familiar—Spanish pieces confirms the very positive impression Eduardo Fernández made with his debut album of music from the Classical period (reviewed here last January). Although his playing is no less brilliant than on the first album, this time his sheer virtuosity seems better subordinated to musical expression. He makes even so familiar a piece as *La maja de Goya* sound fresh, and in the slow movement of Torroba's *Sonatina* he displays impressionistic tone coloring of the greatest delicacy. The sound on the CD is superb, and musically you will find something new to delight the ear every time you play the album. This young guitarist really knows how to make those strings talk!

William Livingstone

THE FLUTE AT THE COURT OF FREDERICK THE GREAT. Benda: *Flute Concerto in E Minor.* Quantz: *Flute Concerto in C Minor.* Frederick the Great: *Flute Concerto in D Major, Adagio.* Jean-Pierre Rampal (flute); Ensemble Orchestral de Paris, Jean-Pierre Wallez cond. CBS Ⓞ IM 39702, Ⓞ IMT 39702, no list price.

Performance: *Strong*
Recording: *Very good*

The flute concertos here by Franz Benda and Johann Joachim Quantz are both powerful works written in the taut *Sturm und Drang* style that shook Europe during the second half of the eighteenth century. The performances are strong, too, though Jean-Pierre Rampal's flute tone could be a little more focused and more finely articulated. The adagio from the Prussian monarch's D Major Flute Concerto is a graceful piece, but I wish there had been space on the record for the entire concerto. Even a royal amateur deserves full treatment. *S.L.*

EDITA GRUBEROVA: Songs of Mozart, Debussy, and Wolf. Edita Gruberova (soprano); Friedrich Haider (piano). CBS Ⓞ IM 42002, Ⓞ IMT 42002, no list price.

Performance: *Very pleasing*
Recording: *Clear, true*

Despite the jacket design showing Edita Gruberova disguised as Shirley Temple

(prima donnas should *look* like prima donnas!), this is a welcome recording. Gruberova's light, silken voice, her finely honed tone, and her beautiful pianissimo are certainly a pleasure to the ear.

There are five Mozart songs here, three in German and two, particularly enjoyable, in French. There are also four selections by Debussy, only one of which, *Clair de lune*, is well known. In these, as in Mozart's French pieces, Gruberova's pronunciation is disciplined and readily intelligible.

Ten of Wolf's *Morike-Lieder* are well selected for their contrasting moods. These deceptively simple pieces can easily become self-consciously mannered in performance (at the close of her career, Schwarzkopf, whose personal performing property the songs had virtually become, was criticized for this), but Gruberova avoids the pitfall, singing with simplicity and unaffected feeling. The well-recorded performance is sympathetically accompanied by Friedrich Haider. *R.A.*

VLADIMIR HOROWITZ: The Studio Recordings (see *Best of the Month*, page 109)

RUTH LAREDO: Recital. Rachmaninoff: *Prelude in C-sharp Minor, Op. 3, No. 2.* Debussy: *Feux d'artifice; Bruyères; La Fille aux cheveux de lin; Reflets dans l'eau.* Scriabin: *Etude in C-sharp Minor, Op. 2, No. 1; Poem, Op. 32, No. 1; Piano Sonata No. 9, in F Major, Op. 68 ("Black Mass").* Prokofiev: *Piano Sonata No. 3, in A Minor, Op. 23.* Ruth Laredo (piano). CONNOISSEUR SOCIETY Ⓞ CD 4060 no list price.

Performance: *Exemplary*
Recording: *Likewise*

Given the Connoisseur Society's well-earned identification with the sound and repertoire of the piano and its success with Ruth Laredo's Scriabin cycle in the Seventies, a Laredo package—including her remake of one of the Scriabin sonatas—was certainly an apt choice for the label's first offering on compact disc. This program was recorded in 1980 and originally issued on an InSync cassette (C4060). The very successful transfer to CD brings the expected improvements in what was already a stunning exemplar of realistic and ideally focused piano sound. The performances themselves are exemplary, too—the Rachmaninoff as tasteful as the Debussy, the Debussy as richly colored as the Scriabin, each piece brought off to near-perfection in its own character. Forty and a half minutes is not a very generous playing time for a CD, and I imagine many collectors will prefer to have some or all of these pieces in integral recordings of related works by the respective composers, but this assortment makes for a pleasing variety, the sort you would enjoy in a live recital—and can relish in this beautiful presentation. *R.F.*

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KATHLEEN BATTLE: A Christmas Celebration. Kathleen Battle (soprano); Boys' Choir of Harlem; New York Choral Artists; Orchestra of St. Luke's, Leonard Slatkin cond. *O Come, All Ye Faithful; Away in a Manger; Silent Night; I Wonder as I Wander; Mary Had a Baby; Un flambeau, Janette, Isabella;* and eighteen others. ANGEL ① DS-37363, ④ 4DS-37363, ⑥ CDC-47587.

CAMBRIDGE SINGERS: Hurry to Bethlehem. Cambridge Singers; City of London Sinfonia, John Rutter cond. *Star Carol; I Wonder as I Wander; Deck the Halls; We Wish You a Merry Christmas;* and six others. COLLEGIUM ① COL-102, ④ COLC-102.

CHICAGO CHAMBER BRASS AND GLEN ELLYN CHILDREN'S CHORUS: Christmas. Chicago Chamber Brass; Glen Ellyn Children's Chorus, Doreen Rao cond. *Fanfare; Joy to the World; Ave verum; Good King Wenceslas; Silent Night; The First Noël;* and nineteen others. CRYSTAL S430.

ROBERT DECORMIER SINGERS: Christmas Eve. Robert DeCormier Singers and Ensemble, Robert DeCormier cond. *The Holly and the Ivy; We Three Kings; No Room at the Inn; I Heard the Bells on Christmas Day;* and ten others. ARABESQUE ① 6527, ④ 6527, ⑥ Z6527.

KEITH FOLEY: Music for Christmas. Keith Foley (Yamaha DX7 synthesizer, Oberheim Xpander, Minimoog synthesizer, other instruments). *Noel "Puer nobis nascitur"; Chorale Prelude "Gelobet seist du, Jesu Christ"; In dulci jubilo; Angels We Have Heard on High; Lo, How a Rose E'er Blooming;* and sixteen others. DIGITAL MUSIC PRODUCTS ④ CD-452.

JAMES GALWAY: Christmas Carol. James Galway (flute); Chapel Choir of King's School, Canterbury; BBC Singers; Royal Philharmonic Orchestra, James Galway cond. *Silent Night; Shepherd's Pipe Carol; Fantasia on "I Saw Three Ships"; Greensleeves; Patapan; We Wish You a Merry Christmas;* and ten others. RCA ① HRC1-5888, ④ HRE1-5888, ⑥ RCD1-5888.

JOHNNY MATHIS: Christmas Eve with Johnny Mathis. Johnny Mathis (vocals); orchestra. *It's Beginning to Look a Lot Like Christmas; Toyland; It's the Most Wonderful Time of the Year; Jingle Bells;* and six others. COLUMBIA FC 40447, ④ FCT 40447.

THE MIGHTY TUBADOURS: Merry Christmas Album. The Mighty Tubadours (instrumentals). *March of the Toys; O Little Town of Bethlehem; We Three Kings; Away in a Manger; Good*

MUSIC FOR CHRISTMAS

THIS year's batch of Christmas albums spans an unusually wide range of repertoire, from *Away in a Manger* to *Jingle*

Bell Rock, performed by an equally wide-ranging group of artists, from—well, almost A to Z—*Battle to Yankovic*. And the music is available, generally, in all three formats, though in a few cases only on compact disc. The Christmas catalog on CD has grown significantly this year, reflecting the growing popularity of the new medium among record buyers with all kinds of musical taste.

Listed below are some of the Christmas albums you will find joining those of years past in record bins all over the country as we head into the 1986 holiday season. —Christie Barter

King Wenceslas; and seventeen others. CRYSTAL S422.

THE NASHVILLE CHRISTMAS ALBUM. Connie Smith and Willie Nelson: *Silent Night*. Merle Haggard: *White Christmas*. Tammy Wynette and the O'Kanes: *Away in a Manger*. The Sweethearts of the Rodeo: *Jingle Bell Rock*. Mickey Gilley and Libby Hurley: *Rockin' Around the Christmas Tree*. And five others. EPIC PE 40418, ④ PET 41418, ⑥ EK 40418.

NEW YORK CITY GAY MEN'S CHORUS: A Festival of Song. New York City Gay Men's Chorus, Gary Miller cond. *God Rest You Merry Gentlemen; Ave Maria; Hodie Christus natus est; The Chanticleer's Carol;* and seven others. PRO ARTE ① PAD 159, ④ PCD 159.

JOHN OLIVER CHORALE: Christmas Antiphonies. Schütz: *Deutsches Magnificat*. Praetorius: *Meine Seele erhebt den Herren*. Bax: *Mater ora filium*. And two others. John Oliver Chorale, John Oliver cond. NORTHEASTERN NR 229.

ORCHESTRA MANHATTAN: Digital Christmas. Orchestra Manhattan, Byron Olson cond. *O Come, All Ye Faithful; Sleigh Ride; Hark! The Herald Angels Sing; Deck the Halls; Toyland; The First Noël;* and eleven others. MANHATTAN ④ CDP-7-46334-2.

ROCHESTER POPS ORCHESTRA: Christmas at the Pops. Waldteufel: *Skater's Waltz*. Tchaikovsky: *Dance of the Sugar Plum Fairy*. J. Strauss: *Snowdrops Waltz*. Anderson: *Sleigh Ride*. L. Mozart: *Sleigh Ride*. And seven others. Rochester Pops Orchestra, Erich Kunzel cond. PRO ARTE ④ PCD-220, ⑥ CDD-220.

ROYAL COLLEGE OF MUSIC CHAMBER CHOIR: Carols for

Christmas. Royal College of Music Chamber Choir and Brass Ensemble, Sir David Willcocks cond. *Hark! The Herald Angels Sing; O Little Town of Bethlehem; It Came Upon a Midnight Clear; Away in a Manger; Good King Wenceslas; The First Nowell;* and thirty-five others. RYKODISC ④ RCD 10004 two CD's.

JAMES SUNDQUIST: Sacred Carols. James Sundquist (guitar). *Joy to the World; God Rest You Merry Gentlemen; Angels We Have Heard on High; Hark! The Herald Angels Sing;* and nine others. EAGLE ④ LGACD-7003.

KIRI TE KANAWA: Christmas with Kiri. Dame Kiri Te Kanawa (soprano); London Voices; Philharmonia Orchestra, Carl Davis cond. *White Christmas; Winter Wonderland; Have Yourself a Merry Little Christmas; Silver Bells; The Little Drummer Boy;* and seven others. LONDON ① 414 632-1, ④ 414 632-4, ⑥ 414 632-2.

FRANK YANKOVIC: Christmas Memories. Frank Yankovic (accordion, vocals); Joey Miskulin (accordion, bass, banjo, synthesizer, piano, guitar, vocals); vocal and instrumental accompaniment. *Old-Fashioned Christmas Polka; A Christmas Wish; What Christmas Means to Me; Blue Christmas; Silent Night;* and five others. SMASH/POLYGRAM 830 396-1, ④ 830 396-4.

BACH: Christmas Oratorio. Soloists; Ensemble Vocal de Lausanne; Orchestre de Chambre de Lausanne, Michel Corboz cond. ERATO/RCA NUM 751373 three discs, ④ MCE 751373 three cassettes, ⑥ ECD 880593 three CD's.

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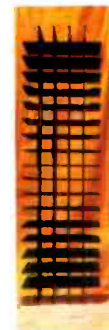


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Discs and tapes reviewed by
Chris Albertson
Phyl Garland
Alanna Nash
Mark Peel
Steve Simels

JOAN ARMATRADING: *Sleight of Hand.* Joan Armatrading (vocals, electric and acoustic guitar, harmonica); other musicians. *Kind Words (And a Real Good Heart); Killing Time; Reach Out; Angel Man; Laurel and the Rose; One More Chance; Jesse;* and two others. A&M SP-5130 \$8.98, © CS-5130 \$8.98.

Performance: *Commanding*
 Recording: *Quite good*

The engaging eccentricities we have come to associate with the music of Joan Armatrading are present here in abundance: the odd harmonies, the melodies that wander into unexpected places, and the story-telling lyrics that seem to hint at hidden meanings. Armatrading seems less folksy and more rockish these days, though it's hard to explain her highly personalized approach. What matters is that her gifts as an assertively gutsy singer and consistently imaginative composer-guitarist remain as commanding as ever. While some of the songs on this album are a bit elusive musically, there are others, such as *One More Chance*, where she delivers real intensity and dramatic power. These moments are worth waiting for. *P.G.*

JOHNNY C: *Soul'd Out.* John Cowan (vocals); vocal and instrumental accompaniment. 634-5789; *When a Man Loves a Woman; I Was Made to Love Her; I Thank You;* and two others. SUGAR HILL 9101 no list price.

Performance: *Overwrought*
 Recording: *Very good*

John Cowan, the spectacular and chilling lead vocalist of New Grass Revival who's billed here as "Johnny C," originally honed his chops singing with rock bands in his home town of Louisville—not by trading solos with bluegrass or country musicians, as one might surmise given his present line of work. But, then again, anyone familiar with the New Grass sound knows that Cowan's vocal licks are frequently Motown-inspired, and, as it turns out, r-&-b is

MARTI JONES

MOST white girls (I'm using the word "girl" here in its stylistic sense, as in "girl groups") who sing rock-and-roll take one of two usually self-defeating approaches. Either they imitate guys, specifically the kind of macho heldentenors who front heavy-metal bands (obvious examples being Pat Benatar and Heart's Ann and Nancy Wilson), or else they rip their lungs out trying to sound black. For my money, however, the most interesting and believable women rock-and-rollers have been those who admit they're no strangers to Miracle Whip, shopping malls, and suburbia, and then—like Carole King or Chrissie Hynde—go on to sing like themselves.

Marti Jones is one of that (too) small, select group, and her new album, "Match Game," is one of the unexpected delights of 1986. Jones, a graduate of the Akron New Wave mafia, has a genuinely attractive voice, and though she can belt when she has to, she mostly projects a certain Midwestern reserve. Actually, she reminds me more than anything of some of those cool Fifties jazz stylists like Chris Connor or Lola Albright on the old *Peter Gunn* TV show, which is to say she's as unabashedly white as Moby Dick but a marvelously haunting and expressive singer nonetheless.

On "Match Game," her second effort as a solo, Jones is backed by some like-minded rockers, including Mitch Easter, T-Bone Burnett, and Marshall Crenshaw, and with their extremely able support she proceeds to charm the pants off a beautifully chosen group of high-quality modern pop/rock numbers. Among them are the exquisitely mournful Free chestnut *Soon I Will Be Gone*, the Searchers' overlooked classic *It's Too Late*, a Bowie song from the Ziggy Stardust period, and some contributions from the boys in the band, most



notably Crenshaw's swell *Whenever You're on My Mind*. The result, all in all, is a smart, instantly appealing little record by a woman who sings rock-and-roll like someone who's secure in her own skin, which is still a rarity in these supposedly enlightened times. Highly recommended. *Steve Simels*

MARTI JONES: *Match Game.* Marti Jones (vocals); Mitch Easter (guitar); Don Dixon (bass, guitar, keyboards, vocals); Marshall Crenshaw (guitar, vocals); Robert Crenshaw (drums); other musicians. *We're Doing Alright; Chance of a Lifetime; Be Myself Again; Just a Memory; Touch Tone; Foolish Lies; Inside These Arms; Whenever You're on My Mind; Crusher; It's Too Late; Soon I Will Be Gone; Soul Love.* A&M SP-5138 \$8.98, © CS-5138 \$8.98, © CD-5138 no list price.

Cowan's first love—a love he expresses unrestrainedly in this solo EP of six songs.

There is such a thing as oversinging, however, and with this effort Cowan is guilty in the first degree. His worst offense is on *Mustang Sally*, where he moans and screeches and tears the song apart. Everything is *so* overdone, in fact, that the record sounds like a *Saturday Night Live* take-off, a goof of an album by someone who doesn't really intend a career as a singer. Finally, Cowan does nothing to improve the original performances of these songs, imprinted still by Wilson Pickett, Stevie Wonder, Percy Sledge, and Sam and Dave. In the end, a surplus of energy

does not make up for real passion, and Cowan has produced a vanity album that lives up to its name. A major disappointment. *A.N.*

JACKIE CAIN AND ROY KRAL: *Bogie.* Jackie Cain (vocals); Roy Kral (vocals, piano); Seward McCain (bass); Curt Moore (drums). *Play It Again Sam; As Time Goes By; Moanin' Low; Bogie; Peter Lorre; Am I Blue;* and six others. FANTASY 9643 \$8.98, © F-59643 \$8.98.

Performance: *Winning*
 Recording: *Ringside quality*

Jackie Cain and Roy Kral have done it again, releasing an imaginative album

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that's a delight from start to finish. This one, recorded live before a small San Francisco audience, is a musical tribute to the enduring movie image of Humphrey Bogart. Mixed in with familiar songs that were part of some of Bogart's best movies are five new songs (one by Lieber and Stoller, four by Kral and Fran Landesman) that were inspired by "Bogie" himself or by characters in his movies.

Cain breathes fresh romantic life into such evergreens as Herman Hupfeld's *As Time Goes By* (from *Casablanca*), even giving us the verse, which most singers have forgotten since Rudy Vallee's days. Cain also succeeds in making Ralph Rainger and Howard Dietz's *Moanin' Low* (from *Key Largo*) deeply poignant without overdoing it the way so many others do. Jackie and Roy are in their brightest duo form for *How Little We Know* (a Carmichael-Mercer song in *To Have and Have Not*) and *Too Marvelous for Words* (a Whiting-Mercer song in *Dark Passage*). Except for *Play It Again Sam*, the new songs are not in the same league as the old ones, but they're enjoyable enough and provide a genially clever leavening to the overall program. Roy Hemming

STEPHEN CAUDEL: *Wine Dark Sea*. Stephen Caudel (guitars, keyboards, bass). *Wine Dark Sea Part I (The Outward Journey)*; *Wine Dark Sea (The Return Journey)*. CODA NAGE 6 \$9.98, © NAGEC 6 \$9.98, © NAGE 6CD no list price.

Performance: *Moving*
Recording: *Very good*

In the notes accompanying "Wine Dark Sea," part of a recent set of seven New Age albums distributed by Jem, Stephen Caudel describes "Wine Dark Sea" as a work evoking "man's struggle to come to terms with his own destiny in ancient and modern times." And, indeed, in Part I swirling acoustic guitars take on layers of soft keyboards with martial punctuations reminiscent of a Roman march. Later, in Part II, the music turns more electric and "modern" sounding, and Caudel often repeats earlier themes as reminders of how the struggle has progressed.

"Wine Dark Sea" is a roller coaster of different acoustic and electronic instrumental textures. For those new to this kind of music, the best comparison would be to Tangerine Dream on a hot streak. But it's not that either. What it is, however, is refreshing and a lot of fun to listen to. Try it with the lights out and with a good set of headphones. I guarantee that you won't be disappointed. Michael Smolen

GEORGE CLINTON AND PARLIAMENT-FUNKADELIC: *The Mothership Connection Live from Houston*. George Clinton (vocals); Parliament-Funkadelic (vocals and instrumentals). *Let's Take It to the Stage*; *Do That Stuff*; *Mothership Connection*; *Doctor Funkenstein*; *Get Off Your Ass and Jam*; and



Eurythmics Lennox and Stewart

four others. CAPITOL MLP-15021 \$5.98, © 4LP-15021 \$5.98.

Performance: *Madcap*
Recording: *Okay*

Anyone who's ever been to a P-Funk concert is unlikely to forget the experience. George Clinton doesn't travel with just a band. He brings along everyone he's ever met, and he puts them all on stage in a display of featherbedding that the longshoremen's union or the King Family would be ashamed of. Dressed as space aliens or urban guerrillas, these extras clap, sing, gyrate, and wave their arms back and forth like a colony of Klingons invading a K-Mart. But tucked in among the hordes are some of the best funk musicians ever to thwack a bass or cut loose a riff—guitarists Gary Shider, Fuzzy Haskins, and Duane Spradley, saxophonist Maceo Parker, Fred Wesley and the Horny Horns, keyboard wiz Bernie Worrell, and bassist Bootsy Collins. And that's what really makes a Clinton concert an evening to remember.

"Live from Houston" samples snatches of Parliament's Mothership Connection tour of 1977. It's totally chaotic—and totally hot. On *Let's Take It to the Stage*, a phantom-of-the-opera synth intro slides into one of Clinton's patented scatological scat sessions, which in turn tumbles into a heavy-funk bass riff (courtesy of Bootsy Collins), a manic horn onslaught, and P-Funk's answer to the *Hallelujah* Chorus. There are times when everything seems in danger of falling apart—but a word from Clinton and it all comes together. M.P.

NICK DRAKE: *Fruit Tree*. Nick Drake (vocals, guitar); Paul Harris (piano); Richard Thompson (guitar); other musicians. *Time Has Told Me*; *River Man*; *Three Hours*; *Day Is Done*; *Way to Blue*; *Cello Song*; *The Thoughts of Mary Jane*; *Time of No Reply*; *I Was Made to Love Magic*; *Clothes of Sand*; *Mayfair*;

and thirty-four others. HANNIBAL HNBX-5302 four discs \$28.95.

Performance: *Haunting*
Recording: *Fair to excellent*

Nick Drake, who killed himself in the early Seventies, was the quintessential intense young man, almost a caricature of the doomed, misunderstood artist—but not quite. A genuinely gifted singer-songwriter, he released three highly regarded but commercially unsuccessful albums before his death ("Five Leaves Left," "Bryter Later," and "Pink Moon"), and now Hannibal has assembled a retrospective package containing all three in their original form plus a fourth disc of out-takes and ephemera.

Drake's music is hard to categorize, even though it sounds familiar. Sometimes it's jazz-tinged, but there's also a hippie/pastoral quality to a lot of it. Several members of Pentangle and Fairport Convention are on hand as backup musicians, which should give you a clue as to what's going on. A sort of late Sixties art-rock influence abounds, particularly on the ten rather gorgeous tracks of "Bryter Later."

Mostly, though, Drake comes off as a much smarter version of Donovan, and if that doesn't strike you as a contradiction in terms, you'll probably enjoy this set. A lot of the material does verge on the precious, and, yes, the smell of incense hovers over the whole thing, which is a bit hard to take in 1986. Still, on its own delicate terms there's a lot of genuinely haunting music here—particularly in "Pink Moon," which may be the most minimalist folk album of all time. It's also as unsettling a suicide note as has ever been committed to vinyl. Interesting stuff, and definitely worth a listen. S.S.

EURYTHMICS: *Revenge*. Annie Lennox (vocals); David Stewart (guitar); vocal and instrumental accompaniment. *Missionary Man*; *Thorn in My Side*; *When Tomorrow Comes*; *The Last Time*; *The Miracle of Love*; *Let's Go*; *Take Your Pain Away*; and three others. RCA AJL1-5847 \$9.95, © AJK1-5847 \$9.98, © PCD1-5847 no list price.

Performance: *Yech*
Recording: *Blah*

Perhaps David Stewart and Annie Lennox are overextending themselves with outside projects. Perhaps they rushed a little to put out this album so soon after "Be Yourself." Whatever the reason, "Revenge" is a dud. Stewart seems to overhaul Eurythmics with each new release—"Sweet Dreams" was synth pop with a distinctly European flavor, "Be Yourself" cast Annie Lennox as the new White Soul Queen, and "Revenge" seems to be Stewart's stab at electric blues. Sonny Boy Williamson he ain't. Turgid, overamplified, and short on ideas, he is. Lennox seems to concur—she sounds as if she sized up what Stewart was up to and decided to phone in her vocals. For all the airplay it's getting, *Missionary Man* sounds like Len-



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RODNEY CROWELL

ALTHOUGH his intention was always to make a mark as a performer, Rodney Crowell has been much better known as a songwriter and producer than as an artist. That's something his fourth album, "Street Language," coming five years after his last one, ought to go a long way toward righting. Solid in material and performance, impeccably produced, and spiked with at least two hit singles, it presents Crowell at the top of his form.

Two years ago, Crowell, a man who believes in doing things his way and not compromising himself, turned in an earlier version of "Street Language" to Warner Bros., his record label at the time. The company rejected the LP as not having any hit singles and as a record that was, being neither country nor rock, likely to fall through the commercial cracks. Crowell took his contract to Columbia, culled four of the songs from the earlier version, and rerecorded them for the new album. In the meantime, his career lost momentum, but the distance gave Crowell the advantage of being able to court a different, rock-oriented audience instead of a pure country following.

Produced by Crowell and Booker T. Jones, who pretty much just helped Crowell keep the lid on his country-rock sound, "Street Language" features nine original songs, from all-out ravers to introspective ballads. There are two terrific left-field ditties—one is about racecar king Richard Petty and another about a guy in love with a woman who stays with a man who beats her—as well as a strong and recurring Everly Brothers influence, most notably on *Stay (Don't Be Cruel)*, co-written and sung with Memphis talent Keith Sykes, a longtime source for Crowell.

The biggest surprise in "Street Language" is that, in contrast to Crowell's previous, sparsely produced LP's, this one is relatively "uptown," even featuring a big-band sound complete with blaring horns and sassy chorines on one cut, *Ballad of Fast Eddie*, a tribute to a



California scenemaker who died in a motorcycle crash. In addition, Crowell, who admittedly used to lean on his songwriting prowess instead of stretching his limits as a performer, sings his *derrière* off on this one.

In the past, Crowell's albums contained songs that failed to become hits for him but went on to top the charts for other performers. There are several "instant classics" here—particularly *Past Like a Mask*, about a man's coming-of-wisdom about his wife, and *Let Freedom Ring*, an uptempo rocker—that ought to score big for Crowell himself. He's said his three goals in making the record were to cut good songs, turn in a consistent performance, and establish himself as a singer. In "Street Language" he's clearly met those goals—and then some. *Alanna Nash*

RODNEY CROWELL: *Street Language*. Rodney Crowell (vocals, guitar); Richard Bennett, Dean Parks, Vince Gill (guitars); Booker T. Jones (organ); Larrie Londin (drums); other musicians. *Let Freedom Ring; Ballad of Fast Eddie; When I'm Free Again; She Loves the Jerk; When the Blue Hour Comes; Oh King Richard; Looking for You; Stay (Don't Be Cruel); The Best I Can; Past Like a Mask.* COLUMBIA FC 40116, © FCT 40116, © CK 40116, no list price.

CRYSTAL GAYLE: *Straight to the Heart*. Crystal Gayle (vocals); vocal and instrumental accompaniment. *Straight to the Heart; Cry; Take This Heart; Crazy in the Heart; Only Love Can Save Me Now; Lonely Girl;* and four others. WARNER BROS. 25405-1 \$8.98, © 25405-4 \$8.98.

Performance: *Improved version*
Recording: *Good*

Crystal Gayle, whose albums of late have been about as interesting as the art of dry-walling, is back with a new producer, Jim Ed Norman, the man who rejuvenated Anne Murray's career some years back. On first listening, three things jump straight out at you from "Straight to the Heart." One is that Gayle has finally given up all pretense of being a country singer and settled into mainstream, MOR pop. Second is that Norman has supplied her with a batch of arresting, if not scintillating, songs, the best being Josh Leo's *Lonely Girl*, Peter Leinheiser and Kathy Cotter's *Take This Heart*, and Graham Cyle and Terry Britten's title tune (with Queen-like vocal washes). But the third—and in some ways most amazing—aspect of this release is that Norman has gone a long way toward taming Gayle's annoying acrobatic vocal mannerisms, something that has marred her work since her first, country-oriented albums. The change is most apparent on Gayle's remake of *Cry*, the old Johnnie Ray hankie-wringer, where she curbs the histrionics, even with a big finish. In the old days, she would have been on the floor with this one.

Gayle is too far along now to be anything other than an MOR tool for the rest of her career. But at least she's being honest about it, and on "Straight to the Heart" she's doing what she does in style. *A.N.*

GENESIS: *Invisible Touch*. Genesis (vocals and instrumentals). *Invisible Touch; Tonight, Tonight, Tonight; Land of Confusion; In Too Deep;* and four others. ATLANTIC 81641-1 \$8.98, © 81641-4 \$8.98.

Performance: *High-tech chirpy*
Recording: *Excellent*

Although criticizing Genesis (or, let's be honest, the Phil Collins Show) is by now roughly on a par with criticizing Motherhood and Apple Pie, it's getting a little wearing to turn on MTV and find every third song or so performed by a past or present member of the band. It's also hard to work up real enthusiasm for the latest Genesis release, a collection of cheerful, slickly produced, and ultimately inoffensive little pop ditties ranging from uptempo r-&-b pastiches (*Anything She Does*) to big Las Vegas ballads (*In Too Deep*) to an actual instrumental (*The Brazilian*). This stuff is, intentionally, nothing more than chart fodder, purely functional, and no apologies. A great stereo demo disc, to be sure, but a better title would have been "Invisible Content." *S.S.*

nox is faking it—without the video, most stations would have skipped this single. The rest of the album goes from bad to boring to unlistenable. *M.P.*

FULL FORCE: *Get Busy 1 Time!* Full Force (vocals and instrumentals); other musicians. *Temporary Love Thing; Unfaithful; Old Flames Never Die; So Much; Chain Me to the Night; Love Scene; Never Had Another Lover;* and three others. COLUMBIA BFC 40395, © BFT 40395, no list price.

Performance: *Funk with fun*
Recording: *Loud*

There's a whole lot of thumping going on here (must the beat *always* be so

thunderous?), but from time to time this all-male funk sextet display the lighthearted touch of a group credited with being a major influence, Sly and the Family Stone. Full Force is best when they temper their heavy percussion with gritty traces of the blues, as in *So Much* and *Old Flames Never Die*. When they are in that groove, they cleverly fuse traditional soul elements with contemporary techniques, like turntable scratching, borrowed from the rappers. Furthermore, these guys can *sing*—when you can hear them—best of all on the soul ballad *Body Heavenly*. Add to this mix some playful patter, and you have yourself a good little party album. *P.G.*

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GTR. Steve Howe, Steve Hackett (guitar, synthesizers, vocals); Max Bacon (vocals); Phil Spalding (bass, vocals); Jonathan Mover (drums). *When the Heart Rules the Mind; The Hunter; Jekyll and Hyde; Hackett to Bits; You Can Still Get Through; Reach Out (Never Say No)*; and four others. ARISTA AL8-8400 \$8.98, © AC8-8400 \$8.98, © ARCD8-8400 no list price.

Performance: *Has its moments*
Recording: *Good*

Your immediate reaction to GTR might be to think that it's another spineless "supergroup" paying homage to overly orchestrated techno-backwash. And considering the cast of characters—Steve Howe (Yes), Steve Hackett (Genesis), Max Bacon (Nightwing)—you could be right. GTR, short for "guitar," is a guitar supergroup, but it's nothing like, say, the Yardbirds (Beck, Clapton, and Page). Individually, Howe and Hackett are two of the best guitar players there ever were or will be, but taken out of their original environments of Yes and Genesis, Howe falls flat on his face and Hackett is just out of his element.

I desperately wanted to like this album, and a lot of it is very good. But the orchestration could use a bit of stripping down. If the band could avoid the mistakes of trying to cater to vast audiences or FM radio, GTR could very well realize its tremendous potential and become the Genesis or Yes of the Eighties. *Michael Smolen*

GWEN GUTHRIE: Good to Go Lover. Gwen Guthrie (vocals); vocal and instrumental accompaniment; *(They Long to Be) Close to You; Outside in the Rain; Good to Go Lover; You Touched My Life; Ain't Nothin' Goin' On but the Rent; I Still Want You*; and two others. POLYDOR 829 532-1 \$8.98, © 829 532-4 \$8.98.

Performance: *Soulful and sassy*
Recording: *Good*

What really inspired me to single this album out from a teetering stack was a middle-of-the-night phone call from a twentyish cousin in a small Pennsylvania town who said she'd gone into a record store that day and told the clerk that if they didn't have this album, her heart would stop. (Thank God they did have it!)

No wonder. After several years as a respected middle-level soul singer, Gwen Guthrie has finally come up with a record that fully reflects her taste for wry, down-to-earth humor and smooth dance rhythms. Furthermore, she is a first-rate singer, which is driven home in the very first phrases of her updated treatment of the Burt Bacharach-Dionne Warwick hit *(They Long to Be) Close to You*. With a lush arrangement, it's one of the best readings of this song I've ever heard.

But it's the humor, as much as the fine singing, that makes this album a winner. The big hit here, previously



Daryl Hall: star presence

released as a single, is *Ain't Nothin' Goin' On but the Rent*, which has become an anthem for single black women. It harks back to the time when a sort of humorous social commentary was a staple of rhythm-and-blues. While some critics have noted that black women singers have turned again to mellow vocal styles of the past, Guthrie should be commended for reviving another element of that golden era. *P.G.*

DARYL HALL: Three Hearts in the Happy Ending Machine. Daryl Hall (vocals, guitar); vocal and instrumental accompaniment. *Dreamtime; Only a Vision; I Wasn't Born Yesterday; Someone Like You; Next Step; For You; Foolish Pride*; and three others. RCA AJL1-7196 \$9.98, © AJK1-7196 \$9.98, © PCD1-7196 no list price.

Performance: *Winning*
Recording: *Excellent*

Daryl Hall is the quintessential "blue-eyed soul" singer, and as such he epitomizes that oxymoronic genre's strengths and weaknesses—the great Motown and Philly soul tradition treated with a little too much cleverness and calculation, like a three-star French chef's recipe for chicken and dumplings. Still, the public has liked what Hall's been doing enough to put seven of his recent singles at the No. 1 spot on the charts. His latest hit, *Dreamtime*, which is No. 5 at this writing, opens his new solo album, "Three Hearts in the Happy Ending Machine." It's a minor pop masterpiece (not at all surprising) that is also not in the least off-putting (for Hall, very surprising).

Co-produced by the Eurythmics' David Stewart, "Three Hearts" is very much like recent Hall and Oates, with some big differences. Like "H₂O," it aims squarely at the crossover charts and scores with repeated accuracy. Hall has a tendency to load up on the production, and he and Stewart create a dense wall of sound here; yet a fairly

amazing amount of instrumental detail, particularly percussion, makes itself heard through all the phase shifting and layers of funk.

Hall's gritty vocals, of course, have tons of star presence, but they sound more creditable than they have since "Abandoned Luncheonette." What really makes "Three Hearts" so winning is that Hall has finally found a way to finesse the one area where he usually gets into trouble—attitude. In fact, the message of "Three Hearts" echoes the old Kokomo single, *It Ain't Cool to Be Cool No More*. On *I Wasn't Born Yesterday*, Hall admits, "I forgot how to feel." On *Foolish Pride*, he suggests that "being too strong is a weakness." And on *Let It Out* Hall wonders why we hold back our emotions: "Why be an Artful Dodger, some cool kind of fool who can slide on by. There's a whole lot of Art in sadness, so make it worth your while if you're gonna cry."

There's a lot of guile and sophistication mixed in with all that soul, but this time Hall sounds as if he really believes what he's saying. *M.P.*

HEAR 'N AID. Hear 'n Aid: *Stars*. Accept: *Up to the Limit*. Dio: *Hungry for Heaven*. Jimi Hendrix: *Can You See Me*. Kiss: *Heaven's on Fire*. And four others. MERCURY 826 044-1 \$8.98, © 826 044-4 \$8.98.

Performance: *Ridiculous*
Recording: *Very good*

The lead track on "Hear 'n Aid" is, of course, heavy-metal's answer to *We Are the World*: a collaboration by a bunch of metallic luminaries on a mush-brained inspirational tune dedicated to ending world hunger. Like its MOR predecessor, *Stars* is undeniably well-intentioned, but it is also unintentionally hilarious. If ever a record proved what a ridiculously circumscribed form heavy-metal is, this one does. In fact, I defy even the most rabid fan of the genre to detect the slightest difference in style or sound between any of the lead singers who take their turns here. It's as if there's one disembodied voice, and all these guys get to borrow it for a few bars at a time.

The rest of the album, except for an old song by Jimi Hendrix (who, one assumes, is beyond being moved by appeals to charity) and a moderately sophisticated track by Rush, is the usual heavy-metal *Sturm und Drang*. If that's your brand of ear damage, then by all means, enjoy. Incidentally, comedians Michael McKean and Harry Shearer, who were there as members of Spinal Tap, participated in these historic sessions, but they did not get to solo. More's the pity. *S.S.*

BRUCE HORNSBY AND THE RANGE: The Way It Is. Bruce Hornsby and the Range (vocals and instrumentals). *On the Western Skyline; Every Little Kiss; Mandolin Rain; The Long Race; Down the Road Tonight*; and four others. RCA NFL1-8058

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CIRCLE NO. 9 ON READER SERVICE CARD

NEW AGE MUSIC ON COMPACT DISC



by Michael Smolen

IT'S a lot easier to find good recordings of new age music on compact discs than it is to find a good description of just what that kind of music is. The best definition of it I have ever read is printed on the cover of every Coda release: "New age music is a musical development that appeals to those with modern values and taste from Eno to Elgar. Instrumental in most cases, [new age] music follows the classic tradition of being able to evoke atmosphere and emotion through the playing of instruments."

Do not think of new age music as a matter of *instrumentation*; it is much more a matter of *form*. It is defined by its very *lack* of definitions, by its free and open musical style.

The record companies that know what new age is and bring us this wonderful music include American Gramophone, Canyon, Denon, EMC, Editions EG, Gramavision, Private Music, Rykodisc, Sonic Atmospheres, and Windham Hill, in addition to those represented in the list below. I've chosen these ten CD's because I think they will give pleasure to someone who is just starting to investigate new age music. These discs are not a complete collection but just the beginning of one. Playing time is indicated in parentheses.

TANGERINE DREAM: *Dream Sequence*. VIRGIN CDTD 1, two CD's (132:50).

Covering every major phase of T. Dream's illustrious career, "Dream Sequence" is a two-disc set of the group's finest work from 1974 to 1983. Such care and attention to digital remastering have rarely been equaled. From *Phaedra* to *The Dream Is Always the Same*, synthesizers, drums, and electric guitars have never sounded more alive than

they do here. Disc Two of this set just may be the finest CD in existence.

STANDING STONES: A NEW AGE COMPILATION. CODA NAGE SCD (44:16).

This album is a sampler including tracks from new age albums by such artists as Rick Wakeman (piano), John Themis (semi-acoustic/electric guitar), Dashiell Rae (piano), Tom Newman, Stephen Caudel (guitars, synthesizers), Claire Hamill (vocals), and Tim Cross. I think they're all great.

PHILIP GLASS: *Mishima*. NONESUCH 79113-2 (46:07).

Performed by the Kronos Quartet and an orchestra conducted by Michael Riesman, this recording of music from Glass's soundtrack for the movie *Mishima* ranks with Disc Two of "Dream Sequence" among the best CD's ever made. The performance is powerful, and the digital recording is flawless.

BARRY CLEVELAND: *Mythos*. AUDION SYNCD 101 (40:55).

Cleveland plays electronic guitar, expanding the vocabulary of the instrument with clocked multiple digital delays, tape loops, violin bows, the Thumbbo, the Masley Bowhammer, and the E-Bow. The album also features Bob Stohl and Kat Epple (Emerald Web) and Mike Masley.

JERRY GOODMAN: *On the Future of Aviation*. PRIVATE MUSIC 2003-2-P (42:20).

Goodman's astounding violin and guitar playing has been heard with the Flock and the Mahavishnu Orchestra. This is his debut solo album, and it is well worth your attention. You will also hear him playing the viola, an instru-

ment he invented. It's all very ethereal, yet accessible at the same time.

EROC: *Wolkenreise*. BRAIN 815 378-2 (39:32).

Eroc, or Joachim Ehrig, is a German multi-instrumentalist best known for his work with the band Grobschnitt. "Wolkenreise," a compilation of his three solo efforts, also features some of his colleagues from the band. Eroc's solos are moody, sparse, introspective works, and this album is a great introduction to the Brain label.

JEAN-MICHEL JARRE: *The Essential Jean-Michel Jarre*. POLYDOR/DREYFUS DCO 2004 (51:44).

Spanning the decade of 1976 to 1986, this disc contains excerpts from Jarre's best work, including *Oxygène*, *Equinoxe*, *Les Chants magnétiques*, and *Zoolook*. Some of it is little more than aural wallpaper, but most of it is highly emotional and gripping.

CLUSTER AND ENO: *Old Land*. SKY/RELATIVITY EMCD 8057 (41:03).

I don't have to tell you who Brian Eno is, but you may not know Cluster, a band that has been making music in numerous incarnations since the late Sixties. The group includes Hans Joachim Roedelius, Dieter Moebius, Holger Czuckay, and Conny Plank. This disc seems to be made up of parts of two earlier releases, "Cluster & Eno" and "After the Heat." Whether minimalist or orchestrated, Eno and the band never fail to please musically.

PINK FLOYD: *Dark Side of the Moon*. HARVEST/CAPITOL CDP-46001 (42:58).

This classic recording signified the beginning of a new age in music, and it still stands up as a prime new age recording. It has improved with time in that it now sounds better on compact disc than it did on vinyl. The stereo effects that were always lost on LP appear on CD with the amazing lack of subtlety that was originally intended. Without the clicks and pops of vinyl, the CD is like manna from heaven.

SYNERGY: *Electronic Realizations for Rock Orchestra*. PASSPORT PBCD-6001 (46:53).

Synergy is Larry Fast—synthesizer builder, player, and composer—and this is his 1975 musical debut now fully realized on compact disc. Considering the limits of the synthesizer in 1975, this performance is a masterpiece. The disc has been remastered in quad (!), and the sound quality is excellent. Outstanding tracks are *Slaughter on Tenth Avenue* and *Warriors*. This disc should make you want to look for Fast's upcoming release on his new label, Audion, distributed by Jem.

Illustration: Lyonel Feininger's painting Zirchow VII, courtesy of the National Gallery of Art



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Performance: *Onto something*
Recording: *Very good*

Despite the name of his band, which makes him sound like a character out of Louis L'Amour, Bruce Hornsby is a Virginian turned Californian who sings about romantic yearning, the search for identity, and the emotional adjustments of a small-town Southerner living as a stranger in a strange land. Musically, while you might expect something along the traditional c-&-w lines, or the small-town grittiness of John Cougar Mellencamp, what you get is a sophisticated mix that summons the dreamy longing of Christopher Cross and the early-Seventies country-rock of, say, Firefall.

Hornsby and his brother John are strong, evocative songwriters—a couple of these cuts, particularly *Every Little Kiss* and *Mandolin Rain*, bring back every heartache you've ever had—and the musicianship and layered arrangements are equally impressive. Hornsby's melancholy piano sets the framework, with George Marinelli and David Mansfield lacing sweet guitar, mandolin, and violin riffs through it all. Aside from the unusually up-front bass and percussion, you'll also hear a hammered dulcimer, accordion, and harmonica. The harmonica, incidentally, comes courtesy of Huey Lewis, who produced three of the tracks and whose vocal style Hornsby can't help but emulate. Like the aforementioned Cross, Hornsby can get a little sappy in his self-absorbed wistfulness. But this album has a way about it. A definite head-turner. *A.N.*

JEAN-MICHEL JARRE: *Rendez-vous*. Jean-Michel Jarre (keyboards); Michel Geiss (keyboards); Joe Hammond (Drumulator, percussion); David Jarre (keyboards); Pierre Gossez (saxophone). *First, Second, Third, Fourth, and Fifth Rendez-vous; Last Rendez-vous (Ron's Piece)*. DREYFUS/POLYDOR 829 125-1 \$9.98, © 829 125-4 \$9.98, © 829 125-2 no list price.

Performance: *Entrancing*
Recording: *Very good*

Jean-Michel Jarre's latest album is the souvenir of an event. Invited by the city of Houston to create a celebration of its sesquicentennial and the twenty-fifth anniversary of NASA's Johnson Space Center in Houston, Jarre conceived something called the "City in Concert." On April 5, 1986, more than a million people filled Houston's parks, bridges, highways, and streets to witness a synchronized musical, pyrotechnic, and laser-projection extravaganza that actually turned the city and its skyline into one gigantic stage. "Rendez-vous" contains the music that accompanied the show, just as it was performed live by Jarre and his seven-member band.

The music on "Rendez-vous," as in all of Jarre's previous work, is a spectacular showcase of electronic sounds per-



Billy Joel: middlebrow pop

formed by a man with a unique ability to draw true gut feelings out of microchips and transistors. All at once, it is beautiful, terrifying, tranquil, haunting—and never boring. A particularly emotional song is *Last Rendez-vous (Ron's Piece)*, a composition written for and dedicated to shuttle astronaut Ron McNair, who was to have played the saxophone at the event but was killed in the recent Challenger disaster.

Michael Smolen

BILLY JOEL: *The Bridge*. Billy Joel (vocals, keyboards); other musicians. *Running on Ice; This Is the Time; A Matter of Trust; Modern Woman; Baby Grand; Big Man on Mulberry Street*; and three others. COLUMBIA ● OC 40402, © OCT 40402, © CK 40402, no list price.

Performance: *Nice*
Recording: *Slick*

Considering that "The Bridge," Billy Joel's latest album, was years in the making and probably cost a fortune to produce, I hate to say it, but it's a nice little record. Not a pop masterpiece, not a flawed, overambitious attempt at a Big Statement, just a collection of stylistically varied, totally unrelated, and basically middlebrow pop songs—some memorable, some merely pleasant, and some forgettable. Best of the bunch is probably *A Matter of Trust*, perhaps coincidentally the most overt piece of swaggering, guitar-heavy crunch-rock that Joel has done in years.

Two of the highly touted guest-star turns are impressive as well. *Getting Closer* features Steve Winwood taking an organ solo that's so beautifully thought out it could have been lifted intact from an old Spencer Davis record, and *Baby Grand*, soon to be a

favorite of saloon singers everywhere, finds Joel more than holding his own with Ray Charles, something I would not have expected. The rest, including the estimable *Modern Woman*, a typically danceable bit of glib social commentary, and *Big Man on Mulberry Street*, a return to the territory of Joel's *Scenes from an Italian Restaurant*, are all solid pieces of commercial craftsmanship, if not exactly world-beaters.

All in all, as I said, it's a nice little album from a guy who one of these days should fess up that he's not Bruce Springsteen or Cole Porter but simply a descendant of all those Brill Building tunesmiths who toiled for Don Kirshner in the Sixties—and that's meant as a compliment. *S.S.*

DON JOHNSON: *Heartbeat*. Don Johnson (vocals); vocal and instrumental accompaniment. *Heartbeat; Voice on a Hotline; The Last Sound Love Makes; Lost in Your Eyes; Coco Don't; Star Tonight*; and four others. EPIC ● BOE 40366, © BOT 40366, no list price.

Performance: *Studied sincerity*
Recording: *Excellent*

Oh, no, you say when you see that Don Johnson, the sockless wonder of TV's *Miami Vice*, has a record out. Is this not another foot soldier—à la Richard Chamberlain, Jack Wagner, Tom Wopat, and, yes, Philip Michael Thomas—in the predictable march from TV turn-on to Top 40 tease? Well, yes and no. Unlike the aforementioned, Johnson has a few legitimate pop credits, having co-written two Allman Brothers songs with his pal Dickey Betts in the late Seventies and having hung out on the fringe of the L.A. music scene for years. That, however, is hardly enough to get you a production budget big enough to call in your pals (Betts, Bonnie Raitt, Ron Wood, Stevie Ray Vaughan, Dweezil Zappa, and the ubiquitous Willie Nelson) from the four corners of the earth and to assemble a crackerjack band led by Chas Sandford, the guitarist and songwriter behind tunes for Stevie Nicks (*Talk to Me*) and John Waite.

No, Johnson is shrewder than that, and apparently he has more character, too. Sure, he wanted to make a commercial rock album (actually, the direction, especially with Sandford's antsy guitar work, is more toward Eagles country-rock), but he also wanted it to be vaguely sinewy, with his celebrity pals doing some honest-to-God wailing instead of the obligatory star turn.

The upshot is that Johnson & Company have turned out a smart and infinitely likable album. Johnson doesn't have much to say—the two tunes he co-wrote follow the general style-over-substance theme of both the rest of the album and *Miami Vice*—but he does a pleasant job of presenting it, and he's fairly good company. His frill-less and somewhat colorless tenor only occasionally frays around the edges or misses its mark, and when he needs to

put some muscle behind it, as on *The Last Sound Love Makes* and *Love Roulette*, it's there for him.

It's on Johnson's own *Can't Take Your Memory* and on Tom Petty's *Lost in Your Eyes* that he gives himself away, however. As stylish and frequently seductive as this album is, Johnson conveys no sense of having actually lived these songs, which he sings like a man acting his way through them. He doesn't have depth as much as aspirations toward it. And in the end, "Heartbeat" is scraped more from a mold than from the soul. *A.N.*

CHAKA KHAN: *Destiny.* Chaka Khan (vocals); vocal and instrumental accompaniment. *Love of a Lifetime; Earth to Mickey; Watching the World; The Other Side of the World; My Destiny; I Can't Be Loved; Tight Fit*; and three

others. WARNER BROS. 25425-1 \$8.98, © 25425-4 \$8.98.

Performance: *Disappointing*
Recording: *Good*

Although Chaka Khan can usually be counted on to deliver albums full of interesting change-ups with zesty singing to spare, this outing is a disappointment. The opener, *Love of a Lifetime*, is a catchy uptempo number with a smidgen of appeal, but most of what follows is hackneyed and unmelodic, with arrangements that seem unduly noisy and cluttered. *Tight Fit* is a rare oasis of delight where Khan slips into a more soulful groove, singing with cool assurance rather than screaming above the surrounding clatter. Even the modified "jazz" selection we have come to expect on each of her sets is abbreviated to a mere minute and a half. Thus the woe-

fully misnamed *Coltrane Dreams* comes off as little more than an undeveloped afterthought, redeemed by a few snatches of delicious tenor saxophone by Sam Rivers. Perhaps producer Arif Mardin was trying to "update" Khan's image, but if so he miscalculated. Too bad. *P.G.*

GORDON LIGHTFOOT: *East of Midnight.* Gordon Lightfoot (vocals, guitar); vocal and instrumental accompaniment. *Stay Loose; Morning Glory; Anything for Love; Let It Ride; Ecstasy Made Easy*; and five others. WARNER BROS. 25482-1 \$8.98, © 25482-4 \$8.98.

Performance: *Mumbling*
Recording: *Very good*

Gordon Lightfoot, the Canadian folk singer responsible for some of the most enduring songs of his or any other gen-

...ing in the
... today.

We're fresh
and imaginative
and aggressive
and daring
and realistic.


We're an a...
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But... of all, we're
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Foot
a 9-to-5
because
it's not a 9-to-5.

eration, is now safely into middle age, and as his music has drifted toward slick MOR in recent years, Lightfoot has appeared to have less and less to say. His newest effort, "East of Midnight," which reportedly took three years to produce, lights down squarely in adult-contemporary territory and is, as far as I can tell, about absolutely nothing. There are a lot of vague references to failed love affairs, cups of tea, putting "a flame in the old hot stove," and, yes, even "if you ever turn that page again." That's about as deep as it goes. Schmalz-and-movie-soundtrack king David Foster wrote the music for one of these tracks (*Anything for Love*), and that ought to tell you a lot. The production, although somewhat predictable for nostalgic ramblings of this sort, is first-rate. *A.N.*

LIVE! FOR LIFE. Stewart Copeland and Derek Holt: *Love Lessons*. Bob Marley: *Lively Up Yourself*. REM: *Ages of You*. The Alarm: *Howling Wind*. General Public: *Tenderness*. And five others. IRS-5731 \$8.98, © IRSC-5731 \$8.98.

Performance: *Variable but fun*
Recording: *Generally good*

An anthology album enabling you to shell out money for a good cause (this time the proceeds go to cancer research), "Live! for Life" collects a motley bunch of tracks, mostly live, by some moderate-to-well-known artists. The most promising selection, *Been Down So Long*, is a collaboration between Sting and Jeff Beck, but like most celebrity blues jams, this one promises a bit more than it delivers. The rest, including a heretofore unreleased REM studio track, is stylistically varied and mostly entertaining, and there are two real winners. Squeeze weighs in with a genuinely soulful version of *Tempted*, perhaps their best-known tune, and the Bangles are represented by a gutsy, take-no-prisoners charge through *Hero Takes a Fall*, complete with some of the best neopsychedelic guitar work in ages. Worth a listen. *S.S.*

REBA MCENTIRE: What Am I Gonna Do About You. Reba McEntire (vocals); vocal and instrumental accompaniment. *Why Not Tonight; What Am I Gonna Do About You; Take Me Back; Let Your Music Lift You Up; I Heard Her Crying; Till It Snows in Mexico;* and four others. MCA ● MCA-5807 \$8.98, © MCAC-5807 \$8.98.

Performance: *Solid*
Recording: *Very good*

In contrast to her last album, "Whoever's in New England," a theme album of woman-to-woman songs, Reba McEntire has now chosen to present a collection of tunes that find her leafing alternately through her diary and her memory book. The pages of both are filled with sad stories of disappointed love as McEntire looks back on the stages of her life, from her carefree teenage days



Melba Moore: special

to her present life as a divorce-bound mother. Make no mistake about it, this is a restless woman.

McEntire, who co-produced "What Am I Gonna Do About You" with Jimmy Bowen, always stays on top of the material, however, never letting it sink to depressing depths. I'm not crazy about a few of these tunes. Karen Staley's *I Heard Her Crying* is reminiscent of some of Dolly Parton's horrific old songs about abused children, and McEntire even sings like Dolly on it; *Take Me Back* is McEntire's paean to 1950's rock-and-roll nostalgia, a subject Ronnie Milsap has already bled to death; and, finally, McEntire erringly trackles *My Mind Is on You*, a song Gus Hardin long ago served up in definitive style. But it's hard to really fault this Oklahoma cowgirl, especially when she can turn out a vocal performance that rings like twin fiddles on *One Promise Too Late* or an emotional reading like *Till It Snows in Mexico*. For several years now, McEntire, the only modern female vocalist loyal to the true country tradition, has had little trouble sewing up the Country Music Association's Female Vocalist of the Year award. This album, despite its small shortcomings, explains why. *A.N.*

SERGIO MENDES: Brasil 86. Sergio Mendes and Brasil 86 (vocals and instrumentals); other musicians. *Daylight; Take This Love; What Do We Mean to Each Other; Your Smile; It Hurts a Whole Lot More; Here Where I Belong;* and four others. A&M SP-5135 \$8.98, © CS-5135 \$8.98.

Performance: *Still a treat*
Recording: *Very satisfactory*

In the twenty years since he hopped aboard a bossa nova wave that swept him all the way from Rio to L.A., Sergio

Mendes has kept his ears open for shifts in popular taste, incorporating these changes into his highly palatable blend of Brazilian music with various North American idioms. Yet he has been wise enough not to tamper with his basic formula, which fuses jazz elements with rich Brazilian rhythms.

While several of the selections here are heavily influenced by current pop modes, including funk, they are tastefully tuneful and pleasant to the ear, if not exactly memorable. Best among the pop-styled tunes are *Daylight*, *What Do We Mean to Each Other*, and *Nonstop*, but if you want to savor vintage Mendes, be assured that at least half of this album consists of tunes that retain the flavor and rhythmic feeling of his homeland. It's a welcome treat for those who remember when Brasil 86 was Brasil 66. *P.G.*

MELBA MOORE: A Lot of Love. Melba Moore (vocals); vocal and instrumental accompaniment. *There I Go Falling in Love Again; It's Been So Long; I'm Not Gonna Let You Go; You Trip Me Out; A Little Bit More; Falling; Stay;* and three others. CAPITOL ST-12471 \$8.98, © 4ST-12471 \$8.98.

Performance: *In top form*
Recording: *Good*

Fortunately, the upward trend that was apparent in Melba Moore's last album is sustained in this set, which features tuneful songs that are mostly moderately paced, with a few on the more exuberant side. Duets with Freddie Jackson on *A Little Bit More* and with Dennis Collins on *It's Been So Long* provide opportunities for smooth vocal interplay, though Kashif, her partner on *Love the One I'm With*, has somewhat less to offer. This is one of those albums made special by virtue of a single spectacular number. Here it's the song *I'm Not Gonna Let You Go*, in which Moore displays the full extent of her vocal and dramatic range. If she weren't already a star, this number would make her one. Don't miss it. *P.G.*

GARY MORRIS: Plain Brown Wrapper. Gary Morris (vocals); vocal and instrumental accompaniment. *Better Than the New; Honeycomb; Today I Started Loving You Again; Lovesick Blues; I'm So Lonesome I Could Cry; Plain Brown Wrapper;* and four others. WARNER BROS. 25438-1 \$8.98, © 25438-4 \$8.98.

Performance: *Eclectic*
Recording: *Very good*

Gary Morris's rich, fluid voice has carried him to the male lead of *La Bohème* opposite Linda Ronstadt at New York's Public Theater, as well as to a recurring role on TV's *The Colbys*. Now he has returned, he says, to recording country music. Morris's idea of country music and yours may vary, however.

As a way of re-examining his roots and the places he started out, it says in the publicity material, Morris collected

a passel of traditional country tunes—from Hank Williams's *Lovesick Blues* to Jimmy Rogers' *Honeycomb* to Merle Haggard's *Today I Started Loving You Today*—and arranged them in his own contemporary fashion, often to show off his lithe, supple-as-Spandex voice. Usually that means a tempo change and a general filing away of edges, rendering these classics into country-music-for-Yuppies, free of all emotional tension.

Using his own band and studio hotshots Jerry Douglas, Mark O'Connor, and Mark Casstevens, Morris balances things out with *Ain't Got Nothin' but the Blues* (yes, the Duke Ellington song), Dave Loggins's saccharine *Better Than the New* (about the loneliness of the aged), and the bluegrassy *Moonshine*. The only cut that comes close to ringing true is the title song, about the unimportance of externals, which Morris co-

wrote with Kevin Welch. This song, which weds jazzy-pop stylings with intelligent, soulful lyrics, is the kind of thing Morris does best. He'd do well to stick to it and leave the country classics to someone who understands what they're about. *A.N.*

NEW GRASS REVIVAL. New Grass Revival (vocals and instrumentals). *What You Do to Me; Love Someone Like Me; Lonely Rider; Sweet Release; In the Middle of the Night; Ain't That Peculiar;* and four others. EMI AMERICA ST-17216 \$8.98, © 4XT-17216 \$8.98.

Performance: *Goin' for broke*
Recording: *Excellent*

In one incarnation or another, New Grass Revival has been together since 1972, dazzling progressive-music fans

with its superlative artistry and creating an entirely new idiom—contemporary music played with bluegrass-style instruments. In those fourteen years, the band has been on several small labels and on more than one occasion seemed a rabbit's breath away from singing with a major label. But the big leagues couldn't figure out how to market the Revival, a band that mixes acoustic-oriented rock with bluesy vocals, jazz with banjo breakdowns, reggae with rock classics, and r-&-b with country. What kind of station would play a song that segues from jazz to Irish to bluegrass and then back again? Quite naturally, to the Nashville way of thinking, no one would be fool enough to take the chance.

Until now. On its first Capitol record, the band has trimmed back its usual lengthy instrumental breaks to concen-

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trate on taut, concise *songs*—songs that can be played on country radio. If you're a longtime Revival fan, this may sound like irrevocable heresy, the ultimate sellout, and artistic ruination. Lest you start clutching your chest, however, let me assure you that the Revival has not changed its basic sound, nor has it taken to singing lyrics like "You can't rub Ben-Gay on a heartache" or "My wife ran off with my best friend, and I miss him." No, New Grass Revival has always been a class act, and it continues to be one.

Granted, New Grass Revival sounds like no other group, and whether its sound is too different to allow it to realize its goal is a very real question. The first single from the new album, John Hall's *What You Do to Me*, did poorly on the national charts. A second, *Ain't That Peculiar*, lead singer John Cowan's reworking of the old Marvin Gaye soul classic, should fare better. And *Saw You Runnin'* would fit into the contemporary radio rotation while turning heads in the time-honored tradition of, "Who are these guys?!"

On the other hand, "New Grass Revival" still retains enough of the kind of expansive, progressive bluegrass that earned the group its international cult following and the awe of its fellow musicians, especially with the stunning, improvisatory *Seven by Seven*. The reggae is there on *Revival*, the rock is there in *Lonely Rider*, and the jazz is wherever you want it, particularly in Sam Bush's tangy fiddling on *In the Middle of the Night*. And while we're handing out kudos, producer Garth Fundis, known for his work with Don Williams, has done a superb job of mixing the vocals and capturing the sound of the instruments—a make-or-break situation with a band like this.

As Abe Lincoln knew, you cannot fool, or even please, all of the people all of the time. But with this album New Grass Revival has got about as good a shot at the pleasing part as anybody has. If country radio refuses to acknowledge that, its refusal is also its loss. *A.N.*

ORLEANS: *Grown Up Children*. Orleans (vocals and instrumentals). *Speed of Love; Grown Up Children; You're Mine; Lady Liberty; Circles; I've Got to Hand It to You;* and four others. MCA ① MCA-5767 \$8.98, © MCAC-5767 \$8.98.

Performance: *Pop tarts*
Recording: *Variable*

Sparked perhaps by the success of such groups as Exile and Sawyer Brown, Orleans, which broke up several years ago, has reunited to take the world by storm. This time out, leader John Hall and his frequent co-writer and wife, Johanna, have aimed for a slightly more country sound to fit into the niche that Nashville always reserves for fading pop stars.

As with anything the Halls approach, the craft shows through in these slick little nuggets of commercial sound, even

when you know they're just pretending, as in a treacly paean to the Statue of Liberty and the title song, a bluegrass toe-tapper about growing up to be a professional musician. On the whole, though, the songs are about absolutely nothing, amounting to little more than adolescent fantasies of sex and love.

Just the same, producers David Hungate and Tony Brown pulled out all the stops, eliciting guest shots from Chet Atkins, Ricky Skaggs, Bela Fleck, and Steve Wariner, all of whom seem to be slumming here. Hall is respected in the business for his level-headedness in the studio, and while I cannot fault his craftsmanship, this stuff is even more hollow than what Alabama puts out. In short, "Grown Up Children" is music for lobotomy patients. It makes a band like Exile seem as message-heavy as the Byrds. *A.N.*

ALAN PARSONS PROJECT: *Stereotomy*. Chris Rainbow, Gary Brooker, others (vocals); Eric Woolfson (vocals, piano, keyboards); Dave Paton (bass); Stuart Elliott (drums); Ian Bairnson (guitars); Richard Cottle (synthesizers, saxophones); Alan Parsons (keyboards); Philharmonia Orchestra. *Stereotomy; Beaujolais; Urbania; Limelight;* and five others. ARISTA AL9-8384 \$8.98, © AC9-8384 \$8.98. © ARCD-8384 no list price.

Performance: *Inspiring*
Recording: *Excellent*

Few artists display the songwriting ability and complete mastery of the recording studio that Alan Parsons does. On "Stereotomy," the Alan Parsons Project's tenth album, Parsons and producer/writer Eric Woolfson have created a digital extravaganza that begs to be played *loud*. It is also one of the first rock albums to be encoded for surround sound. But technical wizardry is not the album's sole attraction. Parsons has gathered his usual studio cronies (Dave Paton, Ian Bairnson, and Stuart Elliott) and added the talents of Gary Brooker (formerly of Procol Harum) and innovative singer/guitarist John Miles to create fully realized swatches of music.

Musically, the record is awash with swirling keyboards, powerful guitars, soulful horns, and one of the tightest pop/rock rhythm sections ever heard. And the album's two instrumentals (*Urbania* and *Where's the Walrus*) are spectacular. Lyrically some old ground (love, drinking, confusion, etc.) is being covered, but in a different way; the music is almost never mournful even when matched with haunting lyrics, as in *Limelight*.

Parsons has been around. From his Grammy-nominated engineering on Pink Floyd's "Dark Side of the Moon" to his work with the Beatles, the Hollies, and Al Stewart, his technique is state of the art—no questions asked. And "Stereotomy," while definitely not his best album, is a significant contribution to the story of contemporary music.

Michael Smolen

RUTH PELHAM: *Look to the People.* Ruth Pelham (vocals, guitar); vocal and instrumental accompaniment. *Turning of the World; The Activity Room; I Cried; In These Golden Days; I Am a Woman; Celebrate; Each of Us Is Kind; Lessons of Life; Look to the People;* and two others. FLYING FISH FF-399 \$8.98, © FF-399-C \$8.98.

Performance: *Uplifting*
Recording: *Spotty*

According to Pete Seeger, Ruth Pelham is "one of America's greatest songwriters." That may be stretching it, but Pelham, a humanist whose concerns revolve around politics and rights for women, kids, and the elderly, is a gifted communicator whose broad, theatrical style fortunately keeps her from becoming didactic.

An Albany, New York, native who travels to schools, libraries, and hospitals in a hippie van dubbed the Music Mobile, Pelham does seem a little too precious at times. But many of her songs—especially *I Cried* and *The Activity Room*—start out with childlike naïveté and end up packing a wallop, especially when they're interpreted (on their own albums) by such artists as Holly Near and Ronnie Gilbert, who clearly have Pelham outdistanced in the singing of them. I don't know that I would listen to this album more than a few times, but Pelham is undoubtedly a source of choice material. *A.N.*

PIECES OF A DREAM: *Joyride.* James Lloyd (keyboards); Cedric Napoleon (bass, vocals); Curtis Harmon (drums); other musicians. *Save Some Time for Me; Say La La; I Can Give You What You Want; Joy Ride; Love of My Life; Careless Whisper; Outside In;* and two others. MANHATTAN ST-53023 \$8.98, © 4ST-53023 \$8.98.

Performance: *Jazz gone funk*
Recording: *Very good*

Back in the late Seventies when the three instrumentalists who make up Pieces of a Dream made their debut playing jazz, they were so exceptionally promising in the direction they were taking that this magazine named their album one of the "Best of the Month." With the release of this set, it's evident that while their dream hasn't become a nightmare of commercial conformity, they're working on it. The message here is that funk sells. There are a few hints of jazz, but they're sort of snuck in, as on *Save Some Time for Love*, the opener, where a few walking-bass passages are used to underscore the funk, enlivening it for a moment.

The best item here is *Say La La*, which is tunefully and rhythmically captivating and has a genuine jazz feeling. Almost on the same high level is *Love of My Life*, with a Stevie Wonder sound and production by Maurice White. If Pieces of a Dream had sustained this level of quality throughout, they might have been forgiven for taking such a creative nosedive. *P.G.*

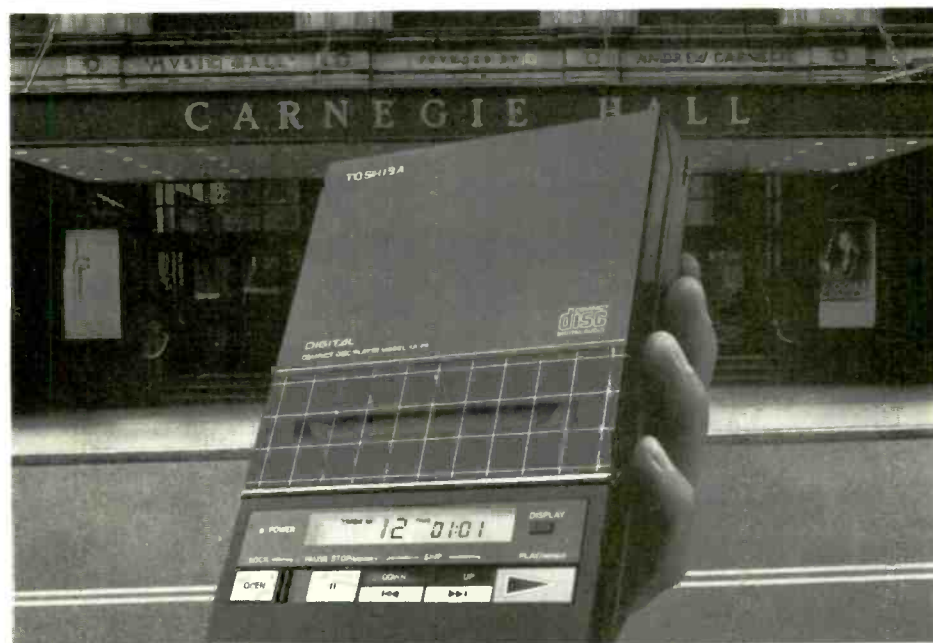
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DAVID + DAVID = BOOMTOWN



THINK of an "L.A. sound" and you might think of the slick, high-tech glitter of bands like Device, or maybe the anarchic fury of X, or the recidivist paisley underground, or one of those bouncy, sun-drenched girl groups. Any one of them could be the genuine voice of Los Angeles, I guess, but they all sound like the spoiled offspring of Hollywood moguls next to David + David, whose debut album produced by Davitt Sigerson for A&M Records is tough, scary, and closer to reality than some people in L.A. ever get.

David + David are David Ricketts and David Baerwald. Ricketts plays guitar, keyboards, and bass, and he writes the music for the duo's prickly folk- and country-rock ballads—the kind of stuff Jackson Browne might write if he were more like Bruce Springsteen and less like Perry Como. Lead vocalist Baerwald, who plays the same instruments and a couple of others, writes lyrics that take a jaundiced view of the city's fast track, hangers on, and also rans.

The album's opening cut, *Welcome to the Boomtown*, is an instant classic—a scorching portrayal of the drugged-out, dried-up losers who fuel the good times in tinsel town. Ricketts scratches out a craggy, mocking guitar line as Baerwald looks down a line-up of self-absorbed beautiful people for whom a Porsche and a beach house and a pile of cocaine aren't there to make life more fun—they're life itself. There's Christina, who can afford marble floors and all the drugs she can take but won't be in any condition to tip the ambulance driver

who comes to get her. And "handsome Kevin, [who] got a little off track, took a year off of college and he never went back, deals dope out of Danny's, has a table in back—he always listens to the ground."

Of course, none of these characters are new to us. But Baerwald's even-tempered examination—uncompromising but never gratuitous—makes their predictable failures all the more unsettling, and his brilliant sense of irony drives the message home with jarring force. Cruising down the highway with *Ain't So Easy*, for instance, you might be tempted to assume Baerwald is singing a tender love song: "I'll kiss your face, attend to your aches, I swear that I can make you happy." That is, until you realize the singer is trying to convince his girl friend, whom he's just given a black eye, not to walk out on him.

Hey, you say, this isn't *fun*. Well, no, it's not a lot of fun. But there's no shortage of fun in pop music today. What there is a shortage of is honesty and truth. David + David's powerful "Boomtown" delivers both in good measure. *Mark Peel*

DAVID + DAVID: *Boomtown*. David Ricketts (guitar, keyboards, bass, back-up vocals); David Baerwald (guitar, bass, mandolin, dobro, keyboards, lead vocals); vocal and instrumental accompaniment. *Welcome to the Boomtown*; *Swallowed by the Cracks*; *Ain't So Easy*; *Being Alone Together*; *A Rock for the Forgotten*; *River's Gonna Rise*; *Swimming in the Ocean*; *All Alone in the Big City*; *Heroes*. A&M SP-5134 \$8.98, © CS-5134 \$8.98.

QUEEN: *A Kind of Magic*. Queen (vocals and instrumentals); vocal and instrumental accompaniment. *One Vision*; *A Kind of Magic*; *One Year of Love*; *Pain Is So Close to Pleasure*; *Friends Will Be Friends*; *Who Wants to Live Forever*; and three others. CAPITOL SMAS-12476 \$8.98, © 4XT-12476 \$8.98.

Performance: *Queen generis*
Recording: *Excellent*

It's hard to be ambivalent about Queen. Either you love their strutting glam-rock/heavy-metal format and Freddie Mercury's prancing AOR falsetto, or you hate it. "A Kind of Magic" won't disappoint those who love it or win over those who hate it. In spite of a rather perfunctory stab at crossover (the ballad *One Year of Love* could wind up on the next Barry Manilow album, while *Pain Is So Close to Pleasure* is the closest this band is ever likely to get to rhythm-and-blues), everything here ends up sounding like vintage Queen, which is to say like the Mormon Tabernacle Choir in drag, on amphetamines, and backed by 10,000 guitars. Typical is *Princes of the Universe*, another of the self-congratulatory anthems (like *We Are the Champions* and *Another One Bites the Dust*) that Queen's devotees can't get enough of but which make everyone else's skin crawl.

Considering that this is only the second time Queen has been in the recording studio this decade (the other time was for "Hot Space" in 1982), they don't sound like they've missed a beat. And advocates and critics alike can appreciate the splendid fretwork of Brian May, guitar maker and player extraordinaire, who sees to it that every track on this album has at least one glittering moment. *M.P.*

QUIET RIOT: *QR III*. Quiet Riot (vocals and instrumentals). *Main Attraction*; *The Wild and the Young*; *Twilight Hotel*; *Down and Dirty*; *Rise or Fall*; *Put Up or Shut Up*; and four others. PASHA/CBS OZ 40321, © OZT 40321, no list price.

Performance: *A drag*
Recording: *Loud*

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THE RAINMAKERS. The Rainmakers (vocals and instrumentals). *Rockin' at the T-Dance; Downstream; Let My People Go-Go; Doomsville; Big Fat Blonde; Long Gone Long; The One That Got Away; Drinkin' on the Job;* and three others. MERCURY ● 830 214-1 \$8.98, © 830 214-4 \$8.98.

Performance: *Aces*
Recording: *Terrific*

Rootsy guitar bands with "Made in the USA" stamped all over them are getting to be a glut on the market, but the Rainmakers, a bunch of Midwestern reprobates making their major-label debut, are something special, and the reason for that is the group's lead singer/songwriter, Bob Walkenhorst. Imagine the *Highway 61* Bob Dylan as a stand-up comedian, John Cougar Mellencamp as a fire-and-brimstone evangelist who's lost the faith, or Hank Williams as a Rhodes scholar on a bender, and you

might have a vague inkling of what Walkenhorst is about.

While the band makes sensationally raucous noises behind him, recalling everybody from the Stones to Lynyrd Skynyrd to the Who, Walkenhorst wails apocalyptic and funny, summoning up a universe in which Christ quotes the Coasters (*Let My People Go-Go*), Chuck Berry rides a raft with Mark Twain (*Downstream*), and "the generation that would change the world is still looking for its car keys" (*Drinkin' on the Job*). Smart, angry, authoritatively rocking, and even genuinely moving at times, "The Rainmakers" is a terrific album. If there's any justice at all, these guys are going to be major stars in short order. Don't miss. *S.S.*

LEE RITENOUR: *Earth Run.* Lee Ritenour (guitars, SynthAxe); Dave Grusin (keyboards); David Foster (keyboards, synth bass); Tom Scott (Lyricon); Phil Perry (vocal); other musicians. *Soaring; Earth Run; If I'm Dreamin' (Don't Wake Me); Butterfly; Water from the Moon; Sanctuary;* and two others. GRP ● A-1021 \$8.98, © D-9538 no list price.

Performance: *Fusion fantasy*
Recording: *Fine*

Lee Ritenour, or "Captain Fingers," the fusion guitarist, returns here with a new

trick in his bag: a digital guitar synthesizer he calls the SynthAxe. You can pretty well guess what it sounds like—the word "shiny" comes to mind—and, probably for that reason, Ritenour uses it mostly for solos, as in the French-horn-like solo he plays in *Sanctuary*, for example.

"Earth Run" contains mostly warm and upbeat originals by Ritenour, Dave and Don Grusin, and Greg Mathieson (who contributes an Eighties salsa tune, *The Sauce*), plus a cover of Herbie Hancock's *Butterfly*. It's all in the usual fusion form—Brazilian, Jamaican, L.A. funk, and jazz influences filtered through technical brilliance and personal vision—but beneath his virtuosity Ritenour has a gentleness and sense of purpose that make his music more accessible than most of the genre. The one vocal performance, by Phil Perry on *If I'm Dreamin' (Don't Wake Me)*, seems more an intrusion than anything else, but on the whole, this set is a fine way to cool out for a spell. *A.N.*

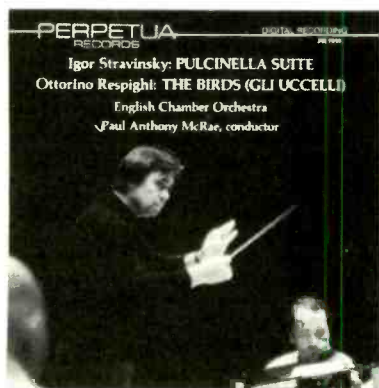
DAVID LEE ROTH: *Eat 'em and Smile.* David Lee Roth (vocals); Steve Vai (guitars); Billy Sheehan (bass); Greg Bissonette (drums); vocal and instrumental accompaniment. *Yankee Rose; Shyboy; I'm Easy; Ladies' Nite in Buffalo?; Goin' Crazy; Tobacco Road; Elephant Run; Bump and Grind;* and two

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others. WARNER BROS. 25470-1 \$8.98, © 25470-4 \$8.98.

Performance: *Supersonic*
Recording: *Good*

Although probably the most intrinsically comical form of music, heavy-metal usually has no sense of humor. Maybe the bands get burned out by years of dressing in chain mail and black leather to play grimy roadside taverns. Maybe they're getting back at us for all those nights they were booted off the stage opening for other, equally burned-out heavy-metal bands. Whatever's eating them, it doesn't seem to have affected David Lee Roth. "Eat 'em and Smile" is a funny album. It also proves that "Crazy from the Heat" was no fluke—Roth can play for yucks and play for keeps.

Now if I'd lost a guitar player like Eddie Van Halen, I might think about another line of work. Not David Lee Roth. He promptly hired Steve Vai away from Frank Zappa. Vai isn't the innovator Van Halen is, but he is a master of heavy-metal technology and cheap theatrics. On *Yankee Rose*, he talks to Roth—I mean, he really carries on a conversation—on his guitar. Without a Vocoder or any other computer gadgetry, just with his fingers and a wah-wah pedal. On *Shy Boy*, Vai launches into furious, Zappa-esque double-time, dual-lead histrionics that seem to leave

even Roth a bit pooped. He clocks a new land-speed record on *Elephant Gun*, does a Hendrix-style riff on *Big Trouble*, and pitches in some tasteful rhythm work on the album's two pop numbers, *That's Life* and an original Roth boogie called (with disarming candor) *I'm Easy*. Eddie who? M.P.

THE SCREAMING BLUE MESSIAHS: *Gun Shy*. Bill Carter (guitar, vocals); Chris Thompson (bass); Kenny Harris (drums). *Wild Blue Yonder*; *Holiday Head*; *Smash the Market Place*; *You're Gonna Change*; *Just for Fun*; *Let's Go Down to the Woods*; *Twin Cadillac Valentine*; *President Kennedy's Mile*; *Someone to Talk To*; and three others. ELEKTRA 60488-1 \$8.98, © 60488-4 \$8.98.

Performance: *Raw meat*
Recording: *Gritty*

The Screaming Blue Messiahs may singlehandedly redefine the term "power trio," sending the likes of ZZ Top off into the easy-listening bins with the Thompson Twins and the Kingston Trio. Led by shaved-skull guitarist/vocalist Billy Carter, the Messiahs deliver the savage, British-punks-on-the-dole menace of the Sex Pistols, the scraggly, unkempt ensemble sound of the Clash, and even a little of the slithering, glass-finger blues guitar of Zoot

Horn Rollo (of Captain Beefheart fame). Carter is backed by drummer Kenny Harris, an agile accompanist who may be the last remaining rock drummer in the U.K. who isn't playing through a machine, and the hard-hitting bass of Chris Thompson, who looks like the first morning after a two-week tequila binge but who keeps the bottom in healthy condition.

Carter's blues and hard-rock songs sound less written than hammered into shape—and, judging from the jerry-rigged duct-tape repairs on his Gibson, they probably were. If his guitar sounds like a weapon, his vocals sound like the matter-of-fact confession of a chain-saw murderer. Perversely, there's no lyric sheet included with "Gun Shy," and since Carter sings with all the careful articulation of a Liverpool skinhead at closing time, we're left to guess about his real intentions.

Some tunes, like *Smash the Market Place*, an obvious tribute to the Clash, are easy enough to get a read on. Others, like *Let's Go Down to the Woods*, leave you wondering whether Carter is talking about a prayer meeting or something more sinister. Printed lyrics would, I'd wager, confirm your worst fears. Muscled, uncluttered, and brutally direct, the Screaming Blue Messiahs are one of the fiercest new voices in rock. Very highly recommended. M.P.

TWO HITS FOR ANY SEASON

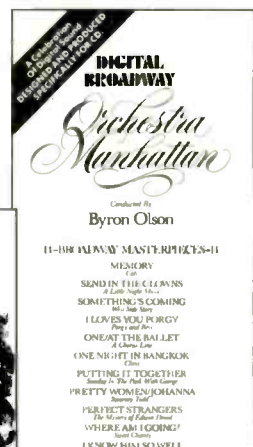
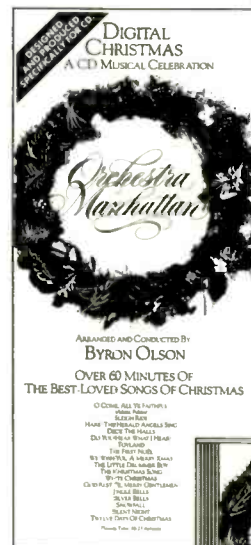
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SIGUE SIGUE SPUTNIK: *Flaunt It.* Martin Degville (vocals); Tony James and Neal X (guitar); Ray Mayhew (drums); Chris Kavanagh (drums); Yana Ya Ya (effects); vocal and instrumental accompaniment. *Love Missile F1-11; 21st Century Boy; Atari Baby; Sex-Bomb-Boogie; Rockit Miss USA; Massive Retaliation; Teenage Thunder; She's My Man.* MANHATTAN/CAPITOL ST-53033 \$8.98, © 4XT-53033 \$8.98.

Performance: *Shameless*
Recording: *State of the art*

At the height of the Sixties, Abbie Hoffman published a book called *Steal This Book*. The idea was that if you paid for the book, you were helping line the pockets of the capitalist establishment Hoffman was urging you to topple. I find myself facing the same kind of paradox reviewing Sigue Sigue Sputnik, an exhilaratingly silly rip-off and devastating parody of pop stardom and the mass-entertainment hype machine—a machine to which you must nonetheless contribute a few bucks if you want to enjoy the record.

Everything about Sigue Sigue Sputnik, from the “designer sex and violence” concept to the cliché electronics, is calculated to pull the wool over the ears of the uncomprehending consumer while infuriating the serious music lover. Or, putting it another way, Sigue

Sigue Sputnik fully acknowledges doing the crassly commercial things that we suspect all pop stars of doing but that no one in his right mind would ever actually admit to. To wit: founder Tony James (a marginal-at-best ex-member of Generation X) recruited the Sputniks strictly on their looks. As James said in an interview, “My initial idea was, if I chose someone that *looks* like a star drummer, even if he can’t play drums, given two years’ practicing he will be a brilliant drummer.” Now admit it: isn’t that how you always assumed Duran Duran was put together?

Then, before writing any music, James hired an accounting firm (Touche Ross) and a high-powered lawyer to strike a deal with EMI, from which he managed to secure a rumored \$4 million advance. Finally, after finishing the record, he sold the “dead time” between tracks to advertisers! So along with the dance hit *Love Missile F1-11*, you get a sixty-second spot for L’Oréal styling gel.

With packaging like this, you have to figure the music was an afterthought. It’s not. Stuff this blatant and gimmicky doesn’t happen by itself. Most serious musicians regard echo and reverb and playing with speeds as a cop-out—the musical equivalent of humming while flapping your lips up and down with your finger—so when they use it, they

do so sparingly. They’re missing the point.

Sigue Sigue Sputnik plays with the dials shamelessly. For “*Flaunt It*,” they set the drum machines on 124 beats per minute, then leaned back and had some fun. Tracks are speeded up, slowed down, played backwards and upside down, dubbed, stuttered, and reverbed at embarrassing lengths. Snatches of conversation alternate with throbbing fuzz-guitar power riffs. Female backing vocals spin at dizzying speeds before vaporizing like electrified carbonated fizz. Phrases from Beethoven’s Fifth and Ninth Symphonies, Elgar’s *Pomp and Circumstance* March, Bach’s Toccata and Fugue in D Minor, and the *William Tell* Overture are thrown into the mix indiscriminately.

So what if the little “original” material here sounds like Devo out-takes? How can you resist a band that offers “affordable fire power” and “sex, technology, films, and real estate?” How can you resist a song called *Massive Retaliation*, which features perhaps the least affected, most sincere refrain in pop-music history: “Shut up, shut up, shut up?”

And the real question: How can you get a copy of this album without having one more cent in royalties go to a band that is, essentially, thumbing their noses at you? You wait for it to reach the cutout bins. Be patient. *M.P.*

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CIRCLE NO. 10 ON READER SERVICE CARD

STEREO REVIEW DECEMBER 1986 171

PAUL SIMON: *Graceland* (see Best of the Month, page 110)

GEORGE STRAIT: #7. George Strait (vocals); vocal and instrumental accompaniment. *Deep Water*; *Nobody in His Right Mind Would've Left Her*; *Rhythm of the Road*; *Stranger Things Have Happened*; *It Ain't Cool to Be Crazy About You*; *Cow Town*; and four others. MCA
● MCA-5750 \$8.98, © MCAC-5750 \$8.98.

Performance: *Hits his stride*
Recording: *Very good*

In his brief but steller career, George Strait has gone from being one of the key up-and-comers to the Top Cowboy of modern country music. He has done this not by recording such country-pop ditties as the syrupy *Marina Del Rey* but by staking a claim to Texas-flavored Western Swing—one of the most passionate and neglected branches of the country idiom.

Strait didn't really find his niche until he hooked up with Nashville hit-maker Jimmy Bowen, who recognized that Strait, with his crisp tenor, no-nonsense delivery, and white-hatted virtue, was tailor-made for the new traditionalism. With Bowen, too, Strait has matured into an uncommonly intelligent interpreter and a surprisingly seamless vocalist, something that stands out on his

new album like a six-shooter at a prayer meeting. Here, he performs with the confidence of a man who always knew it was only a matter of time until he found himself, even managing finally to shake off the vocal inflections he long ago borrowed from his heroes.

It isn't too important to itemize and describe all of the material on Strait's albums these days, because as it's become increasingly consistent, it's also become somewhat predictable. This album revives such oldies as *Deep Water* and *Cow Town*, includes a couple of love ballads (*Nobody in His Right Mind Would Have Left Her* will probably stick around forever), gives a generous nod to honky-tonk, and throws in one fast-moving boot shuffler, *Rhythm of the Road*. But if anyone is going to drift into formula, this is the best way to do it—by recording ten solidly crafted tunes, most of which could be singles.

Strait sounds so inspired here, so genuinely thrilled to be the man on the bandstand, that his "#7" is a lucky number indeed for anyone who appreciates straight-ahead, smart country music. *A.N.*

SWEETHEARTS OF THE RODEO
(see Best of the Month, page 109)

THE GREG TROOPER BAND: *We Won't Dance*. The Greg Trooper Band

(vocals and instrumentals); Carter Cathcart (drums, keyboards). *Play to Win*; *Watch Your Back*; *Everything About You*; *Heroes*; *Little Sister*; *Remember You*; and three others. WILD TWIN WT-1002 \$8.98.

Performance: *Believable*
Recording: *Good*

Greg Trooper is one of those itinerant singer/songwriters who used to litter the streets of New York's Greenwich Village, but on the evidence of this debut album, he's not only got something legitimate to say, but, with the help of a sharp little band, he's found a compelling way to say it. The basic lyrical stance on "We Won't Dance" is somewhere between bruised romantic and populist. The insights may not be epochal, but they're clearly felt, and the wordplay is graceful. On the other hand, what's offered here musically is a sort of suburban-mall version of *Highway 61*: post-folkie tunes (good ones), punchy guitar work, and gruff but emotive singing from the composer.

Trooper's brand of hard-edged modern folk-rock isn't terribly original, and it will remind you (probably deliberately) of a lot of people, including early Dylan, Willie Nile, Mark Knopfler, and Hank Williams. Still, in its own unpretentious way the stuff has genuine personality, and on balance this is an

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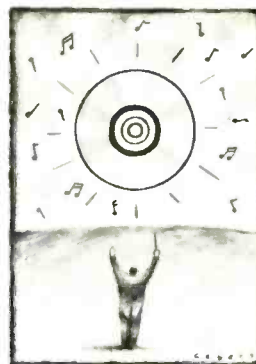
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album well worth hearing. Pick to click: the title song, one of the neater paeans to a girl who got away. S.S.

UB40: *Rat in the Kitchen*. UB40 (vocals and instrumentals). *All I Want to Do; You Could Meet Somebody; Tell It Like It Is; The Elevator; Watchdogs*; and four others. A&M SP-5137 \$8.98, © CS-5137 \$8.98.

Performance: *Good*
Recording: *Good*

UB40 articulates a social vision as different from Jamaican reggae as the rows of prewar brick houses in Liverpool, London, and Manchester are from the corrugated-steel and tar-paper shacks of Trenchtown. While the Rastafarian message is peace through religious devotion and narcotic sedation, UB40 preaches a new society free from the cycle of dehumanizing labor, ennui, indolence, anger, and failure endemic in England's depressed industrial working-class life. When Ali Campbell sings, "All I want to do is stay at home with you," it isn't romance he's talking about, it's simply boredom with his menial job.

The songs on "Rat in the Kitchen" express this rather downcast view of things through provocative, colorful lyrics, strangely cheery tunes, and a lilting beat. Virtually every song here is an

expression of discontent. Some, like *The Elevator*, are metaphorical ("Sixth floor, a mortgage, a collar and a tie, and two weeks vacation in June or July"). Others, like *Tell It Like It Is* and *Don't Blame Me*, don't mince words ("I think it's only fair to say we'd welcome riches down our way, no stigma knotted in my hair, I want to be a millionaire"). But the music skips along in liquid, contrapuntal rhythms.

UB40's music has been criticized for its sameness, but if you lower your thermostat and tune your ear to the subtler effects of Robin Campbell's crisscrossing guitar counterpoint, Earl Falconer's rubbery bass lines, and the muted riffs of the UB40 horn section, there's plenty to sustain your interest. M.P.

DOC WATSON: *Riding the Midnight Train*. Doc Watson (vocals, guitar); Merle Watson (guitar, clawhammer banjo); other musicians. *I'm Going Back to the Old Home; Greenville Trestle High; Highway of Sorrow; We'll Meet Again Sweetheart; Midnight on the Stormy Deep; What Does the Deep Sea Say*; and six others. SUGAR HILL ◉ SH-3752, © SHC-3752, no list price.

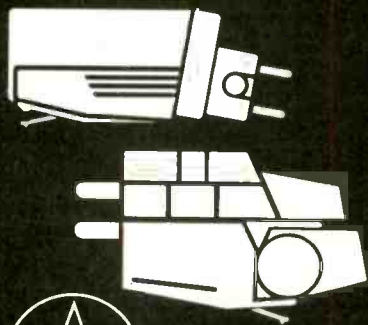
Performance: *Tongue and groove*
Recording: *Exceptional*

While Doc Watson has always been thought of as one of the legends of blue-

grass music, the truth is that the master of old-timey flat-picking is not really a bluegrass picker at all, even though such esteemed players as Tony Rice and the late Clarence White always cited him as an influence. To say that an artist's music transcends conventional labels, or that his personal style is an amalgam of the best from several genres, sounds like hype in these days of grafted-on "roots." But in Watson's case, it is surely the truth.

"Riding the Midnight Train" may be Watson's first bluegrass album, but it doesn't sound all that different from his others—and that's probably the way he wanted it. For one thing, he picks the songs in his own distinctive way, without the banjo dominating the breaks. For another, he has chosen material (much of it in the Bill Monroe/Stamley Brothers tradition) that stands firmly in the bluegrass idiom but has not yet lost its impact from overexposure. And, finally, to ensure that the album does not fall into the cliché breaks and runs that show up on so many bluegrass albums, Watson has picked Mark O'Connor and two members of New Grass Revival (otherwise known as the masters of second-generation bluegrass) to back him. As with most of Watson's albums, however, this one suffers from unvarying tempos and a slight emotional hesitancy in his vocals. But as his first all-blue-

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grass album, and as Merle Watson's last recording with his father, this set occupies a special place in the Doc Watson catalog. A.N.

DIONNE WARWICK: *Say a Little Prayer.* Dionne Warwick (vocals); vocal and instrumental accompaniment. *Raindrops; Out of My Head; People; Monday Monday; Hurts So Bad; Reach Out and Touch; A House Is Not a Home; Only Love Can Break a Heart; You'll Never Walk Alone;* and four others. DUNHILL © DZ5008 no list price.

Performance: *Nostalgia value*
Recording: *Good*

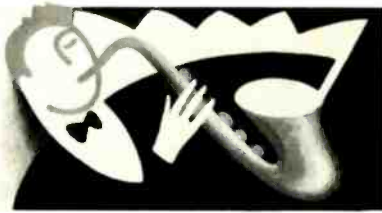
I have had a few occasions to hear Dionne Warwick perform in person, and—except for a rendition of *If* at a Eugene McCarthy rally at Madison Square—she has sounded wretched every time. She seems to fare better on records. There are even some pleasant spots on "Say a Little Prayer," a Dunhill CD-only reissue containing thirteen of her past hits. Of course Warwick fans will not be disappointed, and anyone who didn't spend the late Sixties in a vacuum will find nostalgia value in these tracks. If your CD player is programmable, I suggest you skip *People*, on which Warwick reaches for notes that don't seem to be there, and *Only Love Can Break a Heart*, a track not even the recording engineers could make listenable. C.A.

HANK WILLIAMS: *Lost Highway: December 1948–March 1949.* Hank Williams (vocals, guitar); Audrey Williams, Curley Williams (vocals); the Drifting Cowboys (instrumentals). *There'll Be No Teardrops Tonight; Lost on the River; I Heard My Mother Praying for Me; California Zephyr; A Teardrop on a Rose; Honky Tonk Blues;* and fourteen others. POLYDOR © 825 554-1 two discs \$11.98, © 825 554-4 one cassette \$11.98.

Performance: *Seminal*
Recording: *Varies*

In this third volume of Polydor's continuing series of vintage Hank Williams recordings, Hank Williams buffs will find one previously unreleased performance (*Alabama Waltz*), one recording never before released in this country (*No, Not Now*), and two previously unreleased versions of songs (*California Zephyr, I'm Free at Last*). The purpose of the series, Polydor says, is to present all of Williams's studio recordings in chronological order, in original mono, and remastered for the clearest possible sound. A lot of this stuff is pretty raw, however, since it also includes some non-studio, emotionless demo recordings and run-through takes that weren't quite up to snuff. The sound quality also varies wildly. Unless you are just an unbridled Williams fanatic, you'll probably want to bypass "Lost Highway" for the more commercial recordings, the ones in which Williams was at the top of his form. A.N.

JAZZ



GEORGE ADAMS AND DON PULLEN: *Breakthrough.* George Adams (tenor saxophone); George Pullen (piano); Cameron Brown (bass); Dannie Richmond (drums). *A Time for Sobriety; Mr. Smoothie; Just Foolin' Around; Song from the Old Country; We've Been Here All the Time.* BLUE NOTE BT-85122 \$9.98, © 4BT-85122 \$9.98.

Performance: *Superb*
Recording: *Excellent*

There were far bigger names at the Umbria Jazz Festival of 1984, but—withstanding an extraordinary performance by Sarah Vaughan—the most memorable set was provided by the Don Pullen–George Adams Quartet, a group I had not heard in person before. Their style is an expert mix of the adventurous and the traditional that can be traced to the six years Adams and Pullen spent working under the leadership of Charles Mingus. Add in Dannie Richmond, the quartet's drummer, who was Mingus's main propellant for about two decades, and you get what amounts to a Mingus legacy. Indeed, the Pullen-Adams Quartet was born in 1979, the year Mingus died. Bassist Cameron Brown complements the group in every sense, contributing to a cohesiveness that belies the individuality of its members.

It is sad commentary on this country's jazz scene that this extraordinary quartet's eighth album is its first for an American label—hence the title, "Breakthrough." Fortunately, some of the previous sets are available as imports, and I urge any true jazz lover to explore the dynamic energy, dedication, and creativity of this distinguished quartet. C.A.

THE COUNT BASIE ORCHESTRA: *Long Live the Chief.* The Count Basie Orchestra, Frank Foster cond. *You Got It; A Foggy Day; Shiny Stockings; Good Time Blues; April in Paris; Bus Dust; Autumn Leaves;* and six others. DENON © 33CY-1018 no list price.

Performance: *Where's the Basie?*
Recording: *Excellent*

The Basie band still swings, but there is something missing from "Long Live the Chief," a compact disc release marking the band's fiftieth anniversary. That something is, of course, the Count himself. I have never felt comfortable with ghost bands, for they operate on the premise that their leader was expend-

able. I don't think Basie was expendable any more than Ellington was or the Dorseys were, and this album—with Tee Carson at the piano—proves it. When he was still with us, Basie occasionally vacated the chair, and Nat Pierce proved that he had a pretty good grip on the unique Basie piano style, but you could accept that because it was, after all, only temporary. When Count Basie died, in 1984, the Basie band as we had known it died with him. It was a very different band from the one that brought him into the limelight in the late Thirties, and just as that great orchestra is forever history, so is any real Basie band.

The band here plays some of the old Basie arrangements and sprinkles its program with a smattering of new material in the established style. The playing is precise, correct, and crisp, like the studio bands that give us "The Music of . . ." this one and that one. True, in this case some Basie veterans are involved—including the current leader, Frank Foster—and there is no attempt to copy anybody's solo. There is even the ever-reliable rhythm guitar of Freddie Green, a veteran of Basie's first band—but, given all that, this is still clam chowder without the clam. It's beautifully recorded, though. C.A.

EDDIE DANIELS: *Breakthrough.* Eddie Daniels (clarinet); Philharmonia Orchestra, Ettore Stratta cond. *Siciliano; Circle Dance; Aja's Theme;* and three others. GRP © GRPD-9533 no list price.

Performance: *Boring*
Recording: *Excellent*

Once a member of the Thad Jones/Mel Lewis Orchestra, clarinetist Eddie Daniels here makes his recording debut as a leader in quite a different environment. "Breakthrough" has him playing original compositions and some bastardized Bach with the Philharmonia Orchestra. It is the sort of thing Hollywood used to throw in at the end of a trite musical—you know, the final scene where the young composer at last gets to hear his concerto played in Carnegie Hall. Sad to say, there's a market for it. C.A.

BENNY GOODMAN: *Air Play.* Benny Goodman (clarinet), with his orchestra and small groups. *I Want to Be Happy; Moten Swing; Shine; Bumble Bee Stomp; Dinah; An Apple a Day; Body and Soul; Chicago; I've Got a Pocket Full of Dreams; Swing Low Sweet Chariot; Stompin' at the Savoy; Japanese Sandman;* and eleven others. DOCTOR JAZZ © W2X-40350 two discs, © WTX-40350 two cassettes, no list price.

Performance: *Superb*
Recording: *Fine mono transfers*

When the Benny Goodman Orchestra's enormous popularity reached its peak, coast-to-coast and transatlantic radio hookups were equally popular nightly events, so it is not strange to find that airchecks of the band are still turning

up. "Air Play," a new double album on the Doctor Jazz label, consists of broadcast recordings made between December 1936 and October 1938. Some of these performances were beamed to Japan, others to the BBC in London, and all brim with energy and improvisational skill.

Harry James, Teddy Wilson, Ziggy Elman, Lionel Hampton, Gene Krupa, Jess Stacy, and even Bud Freeman and Dave Tough come alive in these grooves, which also contain some rarities. Because Krupa was out with the flu in early January 1937, a scheduled trio performance of *Body and Soul* became a rare and wonderful duet by Goodman and pianist Wilson, and Hampton's vibes join them for an unusual drumless version of *Dinah*.

Considering that these recordings were made some fifty years ago, on acetates that have been tucked away in a closet, the sound is remarkably good. It can be argued that one Goodman air-check sounds about the same as another; after all, it was the same band playing the same arrangements. But only the inattentive listener will fail to catch the nuances that make an album like "Air Play" important. *C.A.*

SCOTT HAMILTON, JAKE HANNA, AND DAVE MCKENNA: *Major League*. Scott Hamilton (tenor saxophone); Dave McKenna (piano); Jake Hanna (drums). *Cocktails for Two; Swinging at the Copper Rail; Linger Awhile; It All Depends on You; April in Paris;* and four others. CONCORD CJ-305 \$8.98, © CJ-305-C \$8.98.

Performance: *No nonsense*
Recording: *Excellent*

Scott Hamilton has yet to acquire a style of his own, and at this point it's unlikely that he ever will, but there's an irresistible warmth and charm to the way he plays tenor. On "Major League," a new album he shares with pianist Dave McKenna and drummer Jake Hanna, Hamilton plays with characteristic authority, dispersing mellow sounds in an amalgam of styles handed down from Coleman Hawkins, Ben Webster, and Chu Berry. This tightly knit trio is the answer to a ballad composer's dream. I dare anyone not to be moved by their work, either physically, by the drive of *Swinging at the Copper Rail* and *Linger Awhile*, or emotionally, by the lyricism of *I'm Through with Love* or *This Is All I Ask*. *C.A.*

COLEMAN HAWKINS: *Hawkins! Alive! At the Village Gate*. Coleman Hawkins (tenor saxophone); Tommy Flanagan (piano); Major Holley (bass); Ed Locke (drums). *Bean and the Boys; If I Had You; All the Things You Are;* and three others. VERVE © 829 260-2 no list price.

Performance: *Inspired*
Recording: *Excellent remote*

This compact disc release is an extended reissue of an early Sixties Verve

album (MGV-8509), which contained only four of the selections found here. The bonus is two excellent, previously unreleased numbers that bring the total running time up to a healthy fifty-three minutes. Hawkins is in top form throughout, as is the exemplary rhythm section headed by Tommy Flanagan and energized ever so skillfully by bassist Major Holley and drummer Eddie Locke. Digital technology really brings out the flavor of these live recordings made on two summer nights at the Village Gate in New York, and the added tracks are a real bonus.

Just why we had to wait almost twenty-five years to hear this surging rendition of *Bean and the Boys* and Hawkins's truly exquisite recomposition of *If I Had You* is anybody's guess. The insert offers no explanation, for it contains only the notes that accompanied the original, shorter analog release. But a compact disc like this could easily inspire anyone who hasn't yet bought a CD player to go out and get one. *C.A.*

CARMEN McRAE: *Velvet Soul*. Carmen McRae (vocals); Zoot Sims (tenor saxophone); Larry Bunker (vibes, per-

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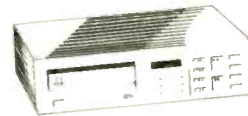


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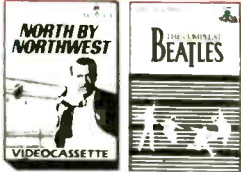


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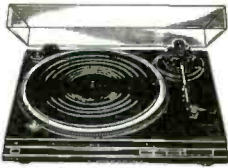
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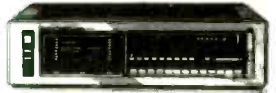
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•Powerful 2-way speaker system

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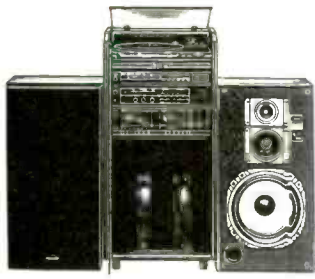


Sherwood S-2640 Digital AM/FM Stereo Receiver •35 watts RMS per channel •12 station presets •Handles two pairs of speakers and two tape decks •Ultra low bass EQ •Digital display **\$109⁹⁵**



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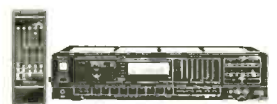
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Technics SA-390 Digital Remote Control Stereo Receiver •50 watts RMS per channel •LED power meters •16-station preset memory •Tape monitor •Two VCR inputs •5-band equalizer •Black finish **\$229⁹⁵**

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Panasonic PV-1564 Four Head VHS HQ Hi-Fi Video Recorder •HQ high quality video system •4 video heads •Special effects playback •38-function wireless remote •Cable ready tuner •14 day/4 event timer •On screen display **\$499⁹⁵**



Panasonic PV-1560 Four Head VHS HQ Video Recorder •HQ Video System •Slow Motion •One Touch Recording •Forward/Reverse Search •Multi-Function Display •Black Finish **\$359⁹⁵**

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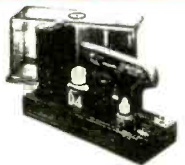
VIDEO TAPE SPECIALS



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cussion); Joe Pass, Bucky Pizzarelli (guitar); Ray Brown (bass); other musicians. *Inside a Silent Tear; All the Things You Are; Masquerade; Exactly Like You; Imagination; The Good Life; Where Are the Words; Straighten Up and Fly Right; How Could I Settle for Less; Sunshine of My Life;* and nine others. DENON © 33C38-7970 no list price.

Performance: *Facile*
Recording: *Very good*

CARMEN McRAE: Ms. Magic. Carmen McRae (vocals); vocal and instrumental accompaniment. *I'm Coming Home; Burst In with the Dawn; Everything Must Change; The Masquerade Is Over; Mr. Magic;* and four others. DUNHILL © DZS021 no list price.

Performance: *Compelling*
Recording: *Very good*

"Velvet Soul," with over an hour's playing time, represents a compilation of Carmen McRae sides from two Groove Merchant albums of the early Seventies: "Ms. Jazz" and "It Takes a Whole Lot of Human Feeling." The combination offers a nice variety, spiced by velvety strings and an occasional thought-provoking input from the likes of Zoot Sims. Denon's CD sound is a clear improvement over the previous releases, and while there are better McRae sets around, the extended running time gives this one an edge when it comes to value.

From an artistic point of view, my preference is for the more pop-oriented Dunhill CD release, "Ms. Magic." Its one hour and thirty seconds are taken from a much longer 1978 two-record Buddah album ("I'm Coming Home Again"), and while Mario Sprouse's arrangements are on the trendy side, the presence of Freddie Hubbard, Hubert Laws, and Hank Crawford adds a jazz tinge. I would not consider it excessive to buy both of these discs. C.A.

ANITA O'DAY: This Is Anita. Anita O'Day (vocals); orchestra, Buddy Bregman cond. *You're the Top; Who Cares; As Long As I Live; No Moon at All; Honcysuckle Rose; Fine and Dandy;* and six others. VERVE © 829 261-2 no list price.

Performance: *A fine O'Day*
Recording: *Very good*

When Anita O'Day was with the Gene Krupa band in the early Forties, she elevated the art of jazz vocalizing. Hers was a smooth, slightly frosty style that often seemed to be headed off key but always ended up on just the right notes. It was a distinctly white approach to an art whose masters had always been black, and, indeed, O'Day's strongest influence was Billie Holiday. O'Day's cool style, on the other hand, spawned such imitators as June Christy and Chris Connor, who *did* go off key and, after a period of considerable success, seem to have sung themselves right off the market.

O'Day had her own down period, a vicious bout with drugs, but she pulled herself together, and she sounds as refreshing today as she did thirty years ago, which is when she recorded "This Is Anita," now reissued on CD. With a large orchestra and strings conducted by Buddy Bregman, who also did the arrangements, O'Day travels effortlessly through a program of familiar material, bending the works of Gershwin, Waller, and Cole to suit herself—and any connoisseur of the art of jazz singing. C.A.

CECIL PAYNE: Patterns. Cecil Payne (baritone saxophone); Kenny Dorham (trumpet); Duke Jordan (piano); Tommy Potter (bass); Art Taylor (drums). *Chessman's Delight; Arnetta; Saucer Eyes; Groovin' High;* and four others. SAVOY JAZZ © SJL-1167 M \$8.98.

Performance: *Polished gem*
Recording: *Fine mono transfer*

You can count all the successful baritone saxophonists in jazz on the fingers of one hand. Naming them, most jazz fans would probably start with Gerry Mulligan and, if they were old enough, Harry Carney—and stop right there. The truly informed would add Cecil Payne, who first distinguished himself as a member of Dizzy Gillespie's band in the late Forties and whose debut album as a leader is again available on Savoy.

With a superb rhythm section headed by Payne's alter ego, pianist Duke Jordan, and with trumpeter Kenny Dorham appearing on four of the eight sides, "Patterns" remains one of the finest albums Payne has made. Low-keyed and drenched in subtleties, it shows a sensitive side of Payne that he somehow lost in later years, and those who regard the baritone as a cumbersome instrument will have to think again, for Payne makes it sound here as light as an alto. If you value fine bop, don't pass this one up. C.A.

JOHN TROPEA: NY Cats Direct. John Tropea (guitar); Warren Bernhardt, Richard Tee (keyboards); Steve Gadd (drums); other musicians. *Free Lunch; Moroccan Nights; Super Ascension; Just Blue; Mr. Music;* and four others. DIGITAL MUSIC PRODUCTS © CD-453 no list price.

Performance: *Uneventful*
Recording: *Excellent*

Guitarist John Tropea is one of that handful of New York studio musicians whose anonymous work is heard on countless albums and singles ranging in style from the clamor of a Yoko Ono session to the more soothing sounds of Paul Simon—both of whom are, in fact performers for whom Tropea has provided background. On "NY Cats Direct," he steps up front to lead some of his fellow session men. Although all of the musicians are technically skilled players who never seem to miss a note, what they come up with is a routine exercise. C.A.



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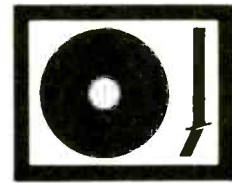
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MCA'S IMPULSE!

In the Sixties, when meaningful jazz recordings were as common as the diluted fusion variety is today, a new label dedicated to the art took its place alongside Prestige, Riverside, World Pacific, Atlantic, and Blue Note. Unlike those independent labels, however, Impulse was a subsidiary of a larger concern, ABC Paramount. But the big-business connection did not adversely affect the quality of the label's jazz repertoire as it might have. On the contrary, thanks to the forward thinking of its creator, Creed Taylor, and to Bob Thiele, the producer who replaced him, the Impulse label soon became known for its unorthodox catalog. Throughout the Sixties, the wide, glossy, orange-and-black spine that identified an Impulse album lent a special character to



Count Basie

any comprehensive collection of modern jazz. It was a label that opened its microphones to the day's avant-garde as well as to established artists of the past, and it often made the combination of seemingly disparate stylists appear thoroughly logical.

Now, after a long absence, Impulse has been revived by its current parent company, MCA Records. Fourteen albums have just been released to launch what we are told will be a systematic reissue of the entire Impulse catalog, this time in three formats—LP, CD, and tape cassette. It's more than just a reissue program, however. The release schedule also includes new albums, and, indeed, there are two new ones in the first batch.

These two are by artists who have yet to establish themselves, pianist Henry Butler and trumpeter Mike Metheny. The latter's brother, guitarist Pat Metheny, who appears with him on "Day In—Night Out," has already made a name for himself in the rock/jazz field. The more subdued Mike Metheny comes to Impulse with a classical background and one album (on the Headfirst label in 1982) already under his belt. He has yet to develop a musical identity, but his pleasant trumpet work reveals a sensitivity and grace that some

day might well be molded onto a proprietary style.

Unlike Metheny, who has surrounded himself with other unknowns (except for bassist Rufus Reid), New Orleans-born Henry Butler makes his debut with such familiar names behind him as Charlie Haden, Billy Higgins, and Freddie Hubbard. But Butler is very much his own man. His album, "Fivin' Around," is an eclectic collection of ten selections (the CD has an additional three) that show Butler to be a multifaceted artist of considerable talent as a pianist, as a composer, and even as a singer. Importing from Europe such pedestrian surrogate pianists as Adam Makowicz and Michel Petrucciani makes even less sense when you hear the likes of Butler.

The two least interesting reissues are Ahmad Jamal's "The Awakening," a bland trio set, and a 1961 Quincy Jones big-band date, "The Quintessence," which lacks the imagination and spirit of others in the series like Oliver Nelson's "Blues and the Abstract Truth" and Gil Evans's "Out of the Cool." Still, it is not at all unpleasant to listen to, and twenty-five years ago Jones had yet to step on the pop treadmill.

The remaining reissues are all first-rate, ranging from a most interesting summit meeting, "Duke Ellington Meets Coleman Hawkins" (with Johnny Hodges, Lawrence Brown, Ray Nance, and Harry Carney), to Charlie Mingus's highly original "The Black Saint and the Sinner Lady," John Coltrane's widely acclaimed "A Love Supreme," and Coltrane's mellow teamwork with balladeer Johnny Hartman on a second album. For mainstream fans, there are two solidly swinging sets, both propelled by drummer Jo Jones. They are Benny Carter's "Further Definitions," with Coleman Hawkins, Phil Woods, and Charlie Rouse, and "Count Basie and the Kansas City Seven," a 1962 bow to the famous Basie small-band sides of 1936. There are also fine quartet sessions by Sonny Rollins and Art Blakey. And all the albums in the series have been digitally mastered or remastered and produced with splendid technical quality.

No matter how familiar you are with



John Coltrane



Henry Butler

this material, the compact disc versions will guarantee you a whole new experience. I just wish MCA had splurged for a few additional pages in the CD inserts. Reducing the album notes to less than a quarter of their original size makes them all but impossible to read without a magnifying glass. *Chris Albertson*

THE NEW RECORDINGS

HENRY BUTLER: *Fivin' Around*. Henry Butler (piano, vocals); Freddie Hubbard (trumpet); Charlie Haden (bass); Billy Higgins (drums); other musicians. *Giant Steps; My Coloring Book; I Want Jesus to Walk with Me; Old Folks; Improvisation on an Afghan Theme*; and five others (eight on CD). IMPULSE! ● MCA-5707, © MCAC-5707, © MCAD-5707.

MIKE METHENY: *Day In—Night Out*. Mike Metheny (flugelhorn, Steiner EV1, trumpet); other musicians. *Like the Ocean; Vanity; Segment; Olvidar*; and four others. IMPULSE! ● MCA-5755, © MCAC-5755, © MCAD-5755.

THE REISSUES

COUNT BASIE AND THE KANSAS CITY 7. Count Basie (piano, organ); Thad Jones (trumpet); Frank Foster, Eric Dixon, Frank Wess (flute, tenor saxophone); Freddie Green (guitar); Ed Jones (bass); Sonny Payne (drums). *Oh, Lady, Be Good; Shoe Shine Boy; I Want a Little Girl; Secrets*; and four others. IMPULSE! ● MCA-5656, © MCAC-5656, © MCAD-5656.

ART BLAKEY: *A Jazz Message*. Art Blakey (drums); Sonny Stitt (alto and tenor saxophones); McCoy Tyner (piano); Art Davis (bass). *Summertime; Blues Back; Cafe*; and three others. IMPULSE! ● MCA-5648, © MCAC-5648, © MCAD-5648.

BENNY CARTER: *Further Definitions*. Benny Carter (alto saxophone); Coleman Hawkins, Charlie Rouse (tenor saxophone); Phil Woods (alto saxophone); Dick Katz (piano); John Collins (guitar); Jimmy Garrison (bass); Jo

Jones (drums). *Crazy Rhythm; Cotton Tail; Body and Soul; Honeysuckle Rose*; and four others. IMPULSE! ● MCA-5651, © MCAC-5651, © MCAD-5651.

JOHN COLTRANE: *A Love Supreme*. John Coltrane (tenor saxophone); McCoy Tyner (piano); Jimmy Garrison (bass); Elvin Jones (drums). *A Love Supreme, Parts 1-4*. IMPULSE! ● MCA-5660, © MCAC-5660, © MCAD-5660.

JOHN COLTRANE AND JOHNNY HARTMAN. John Coltrane (tenor saxophone); Johnny Hartman (vocals); McCoy Tyner (piano); Jimmy Garrison (bass); Elvin Jones (drums). *My One and Only Love; Dedicated to You; Lush Life; Autumn Serenade*; and two others. IMPULSE! ● MCA-5661, © MCAC-5661, © MCAD-5661.

DUKE ELLINGTON MEETS COLEMAN HAWKINS. Duke Ellington (piano); Coleman Hawkins (tenor saxophone); Ray Nance (cornet, violin); Lawrence Brown (trombone); Johnny Hodges (alto saxophone); Harry Carney (baritone saxophone, bass clarinet); Aaron Bell (bass); Sam Woodyard (drums). *Mood Indigo; The Jeep Is Jumpin'; You Dirty Dog*; and five others. IMPULSE! ● MCA-5650, © MCAC-5650, © MCAD-5650.

GIL EVANS: *Out of the Cool*. The Gil Evans Orchestra. *Bilbao Song; Stratus-phunk; Where Flamingos Fly*; and two others. IMPULSE! ● MCA-5653, © MCAC-5653, © MCAD-5653.

AHMAD JAMAL: *The Awakening*. Ahmad Jamal (piano); Jamil Nasser (bass); Frank Grant (drums). *I Love Music; Wave; Stolen Moments*; and four others. IMPULSE! ● MCA-5644, © MCAC-5644, © MCAD-5644.

QUINCY JONES: *The Quintessence*. Quincy Jones and His Orchestra. *Invitation; Straight, No Chaser; The Twitch; Robot Portrait*; and four others. IMPULSE! ● MCA-5728, © MCAC-5728, © MCAD-5728.

CHARLIE MINGUS: *The Black Saint and the Sinner Lady*. Charlie Mingus (bass, piano); orchestra. *Solo Dancer; Duet Solo Dancers; Group and Solo Dance*; and three others. IMPULSE! ● MCA-5649, © MCAC-5649, © MCAD-5649.

OLIVER NELSON: *Blues and the Abstract Truth*. Oliver Nelson (alto and tenor saxophones); Freddie Hubbard (trumpet); Eric Dolphy (flute, alto saxophone); George Barrow (baritone saxophone); Bill Evans (piano); Paul Chambers (bass); Roy Haynes (drums). *Butch and Butch; Stolen Moments; Cascades*; and three others. IMPULSE! ● MCA-5659, © MCAC-5659, © MCAD-5659.

SONNY ROLLINS ON IMPULSE. Sonny Rollins (tenor saxophone); Ray Bryant (piano); Walter Booker (bass); Mickey Roker (drums). *On Green Dolphin Street; Blue Room*; and three others. IMPULSE! ● MCA-5655, © MCAC-5655, © MCAD-5655.

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ACADEMY OF ST. MARTIN-IN-THE-FIELDS: *At Longleat. Grieg: Holberg Suite, Prelude. Bach: Suite No. 3, Air; Jesu Joy of Man's Desiring (arr. Marriner); Sheep May Safely Graze (arr. Marriner). Handel: Solomon, Arrival of the Queen of Sheba; Berenice, Minuet; Messiah, Pastoral Symphony. Pachelbel (arr. Marriner): Canon.* And four others. Academy of St. Martin-in-the-Fields, Neville Marriner cond. KULTUR 1128 VHS Hi-Fi and Beta Hi-Fi \$29.95.

Performance: *A gem*
 Recording: *Very good*

This well-chosen program of familiar compositions from the classical repertoire is exquisitely performed by Neville Marriner and the Academy of St. Martin-in-the-Fields. And the stunning surroundings of England's four-hundred-year-old Longleat House constitute icing on a cake that by itself could please the most discriminating listener.

The music of Bach, Mozart, Grieg, and Handel provides a perfect accompaniment for the tour the cameras take us on. We see the green fields and gardens that frame this grand house—which was two hundred years old at the time of Handel's birth—and we are made privy to some of its splendid rooms and furnishings. There was a time when orchestras performing in this grand house were placed out of sight, the attitude being that musicians should be heard but not seen. Many years later, the limits of radio broadcasts and phonograph recordings made us again accept a sound-only arrangement, but times and technology have a way of turning things around. This well-recorded fifty-five minute tape, sensitively directed by Dave Heather, is all you need to convince a skeptic of the value of video presentations of classical music. *C.A.*

JOAN ARMATRADING: *Track Record.* Joan Armatrading (vocals, guitar); other musicians. *Temptation; Kind Words; Me Myself I; Drop the Pilot; Call Me Names;* and eighteen others. A&M VC-61007 VHS Hi-Fi \$29.95, BC-21007 Beta Hi-Fi \$29.95.

Performance: *Overlong*
 Recording: *Good*

Joan Armatrading is an interesting singer-songwriter, but her new video—at

PETER GRIMES



Jon Vickers as Grimes: a creation to be held in memory

BENJAMIN BRITTEN'S opera *Peter Grimes* has at last been released in the U.S. on videotape (it has been available on LaserDisc for some time) in the Covent Garden production conducted by Sir Colin Davis, and heading a splendid cast is a figure readily familiar to American opera-goers—the Canadian tenor Jon Vickers. Of the many roles in which Vickers has distinguished himself, none is more closely identified with him than that of Peter Grimes. His delineation of the character, both musically and dramatically, has come to be the touchstone by which other interpretations are judged. Like the Tosca of Maria Callas, his is a creation to be held in memory by the public and, in all probability, to be emulated by future exponents of the part. Sir Colin, too, has long been associated with Britten's score and has made it a part of himself. Together, these two artists make any performance of *Peter Grimes* a transcendent experience.

But the excellence of this performance is even more embracing. Every participant not only sings well but also performs with dramatic conviction, even looking the part he or she is playing—always an aesthetic plus in today's visually conscious operatic productions. Heather Harper sings with pure and lustrous tone and acts with a sincere simplicity; her affecting Ellen is utterly credible. Norman Bailey employs his burly baritone to good effect as the honest, sympathetic, yet realistic Balstrode. As Ned Keene, the quack apothecary, Philip Gelling is humorously unctuous and insinuating. Elizabeth Bainbridge's Auntie is properly earthbound and robust, while Patricia Payne's Widow Sedley is affectingly comic in her conflict between malicious

respectability and her addiction to laudanum. In sum, there is not one weak link in the cast. And under Davis's sensitive, sure direction, the chorus and orchestra of London's Royal Opera House at Covent Garden perform with conviction and accuracy.

Unlike many (I am tempted to say "most") videotaped operatic performances, this one was carefully prepared as a television vehicle. It was not, however—like the *Salome* or *Elektra* that Karl Böhm left as his video legacy—a studio endeavor. *Grimes* was photographed in 1981 on the stage of the Royal Opera House in London, either in performance or in final dress rehearsal (the program notes do not reveal which), and the camera work is expertly executed to capture mood, facial expression, and character relationships. The design of both scenery and costumes is suitable and effective, as is the lighting, which contributes so much to the atmosphere of the work. For everyone who will enjoy an authoritative performance of an exceptional opera, this videocassette or disc is wholly recommended as "state of the art."

Robert Ackart

BRITTEN: *Peter Grimes.* Jon Vickers (tenor), Grimes; Heather Harper (soprano), Ellen; Norman Bailey (baritone), Balstrode; Philip Gelling (baritone), Ned Keene; John Lanigan (tenor), Rector; John Dobson (tenor), Boles; Elizabeth Bainbridge (mezzo-soprano), Auntie; Patricia Payne (mezzo-soprano), Mrs. Sedley; others. Chorus and Orchestra of the Royal Opera House, Covent Garden, Sir Colin Davis cond. HBO/CANON TVE-3562 VHS Hi-Fi \$39.95, TXE-3562 Beta Hi-Fi \$39.95. PIONEER ARTISTS PA-82-008 LaserDisc \$59.95.

ninety minutes, the length of many feature films—is at best a vanity production. The bulk of the program is a documentary of her visit to St. Kitts (where she was born) during the island's Independence Week celebration. Unfortunately, Armatrading left home for England at the age of three, so what we get here is seemingly interminable footage of her walking around and not remembering any of the places she's seeing. Also included is a profile of the artist from the Australian version of *60 Minutes* (interesting only because it's exactly like the American *60 Minutes*) and, finally, some concert footage from a recent show in Sydney. If the concert stuff were edited down and marketed on its own, it would probably make a decent video EP. I suppose Armatrading's hard-core fans will eat all this up, but for the rest of us "Track Record" comes across as "Everything You Always Wanted to Know About Joan Armatrading, but Now Aren't You Sorry You Asked?" *L.M.*

FATS DOMINO: *Live!* Fats Domino (vocals, piano); orchestra. *My Girl Josephine; Blue Monday; I Want to Walk You Home; Blueberry Hill;* and three others. MCA 7682 VHS Hi-Fi and Beta Hi-Fi \$19.95.

Performance: *Fine Fats*
Recording: *Quite Good*

Fats Domino began turning out hits thirty-six years ago, but his style seems to be as enduring as the blues on which he built it. That may well be the reason for the unchanging way he delivers a song. In fact, he even appears to have locked his repertoire into place. Judging by "Fats Domino Live!," taped at a Los Angeles summer concert a year ago, that's perfectly all right with his fans.

The band—trumpets and saxophones with a rhythm section—plays the simple riffs well, projects the uncomplicated solos with authority, and looks as if it has been around since Domino's early days. His appearance is remarkably unchanged, and his voice is as smooth as ever. It all adds up to a very fast nineteen minutes, reproduced on my VHS review cassette with a clarity close to that of a LaserDisc. *C.A.*

ELTON JOHN: *Breaking Hearts Tour.* Elton John (vocals, piano); vocal and instrumental accompaniment. *Rocket Man; Benny and the Jets; The Bitch Is Back; Sad Songs; Candle in the Wind;* and three others. VESTRON MA1024 VHS Hi-Fi \$29.95, MB1024 Beta Hi-Fi \$29.95.

Performance: *Captivating*
Recording: *Good*

They're all here—well, almost—Elton John's big hits, from *Benny and the Jets* to *Sad Songs*, captured live during his 1984 Breaking Hearts Tour. Clad in straw hat and two-toned tails, the singer rocks the concert grand with his gospel-tinged accompaniments and delivers the kind of energy-charged show ex-



Patti LaBelle: a sweaty treat

pected of him. The audience responds accordingly. When *Benny and the Jets* evolves into a bit of keyboard exhibitionism by way of Glenn Miller's *In the Mood*, a young lady, perched on someone's shoulders in the tightly packed audience, shakes her bra off. The tape editors, obviously also inspired, manifested their enthusiasm in a more acceptable way, by adding spiffy computerized video effects—and not overdoing it. Given all that along with excellent stereo sound, this is indeed a desirable video release. *C.A.*

PATTI LABELLE: *Look to the Rainbow Tour.* Patti LaBelle (vocals); vocal and instrumental accompaniment. *It's a Joy to Have Your Love; Come What May; Lady Marmalade; Wind Beneath My Wings; Up Where We Belong; You Are My Friend; Somewhere over the Rainbow;* and six others. U.S.A. 212-847 VHS Hi-Fi and Beta Hi-Fi \$29.95. PIONEER ARTISTS PA-86-167 LaserDisc \$29.95.

Performance: *All stops out*
Recording: *Very good*

No matter what you think of Patti LaBelle's miracle-of-Spandex voice—and I admit her high-pitched histrionics are tiresome at times—there is no denying that she puts on a *show*. In this particular concert, where she's backed by a mini-orchestra and three well-oiled gal singers, LaBelle gets off to a slow start. Soon, however, she revs up to full speed, where she sasses, swoons, shimmies, screeches, and soars, occasionally dropping down to baby-like tones. As if that weren't enough, she kicks off her shoes, falls down on the stage, and rolls all the way across it in a tribal dance of purging emotion.

I could have done without the breakdancers parading on in the middle of *Lady Marmalade*, the most brilliant song LaBelle ever got her hands on, but when the Triumph choir takes the stage on *Up Where We Belong*, it's a moment

of true inspiration. On the whole, this one's a sweaty treat. *A.N.*

PAUL MCCARTNEY: *Rupert and the Frog Song.* Paul McCartney, Linda McCartney, Wings (vocals and instrumentals). *Rupert and the Frog Song; Seaside Woman; The Oriental Nightfish.* PIONEER ARTISTS PA-86-M037 LaserDisc \$16.95.

Performance: *Lovely*
Recording: *First-class*

Paul McCartney's *Rupert and the Frog Song*, based on a popular British children's comic strip, is the best-selling video in U.K. history, and with good reason: it's a complete charmer. The plot is slight—little Rupert the Bear stumbles on a midnight concert by the assembled amphibians—but the animated carryings on are gorgeous (none of that Hanna-Barbera Saturday morning schlock here; in fact, comparisons with *Fantasia* would not be inappropriate), and the music concocted by McCartney and Beatles producer George Martin is nothing short of adorable. For once McCartney's usually cloying whimsey has found an appropriate context.

The short animations that follow *Rupert* on side two necessarily suffer in comparison, although *The Oriental Nightfish* is an impressive slice of psychedelic Art Nouveau. No matter: *Rupert* is a little masterpiece of kid/vid, and Pioneer's sound is superb. *L.M.*

THE ROD STEWART CONCERT VIDEO. Rod Stewart (vocals); other musicians. *Tonight's the Night; Dance with Me; Hot Legs; You're in My Heart; Dock of the Bay; Young Turks; Maggie May; Some Guys Have All the Luck;* and seven others. KARL LORIMAR 099 VHS Hi-Fi and Beta Hi-Fi \$29.95.

Performance: *Professional*
Recording: *Very good*

When I was just a baby rock critic, I did an interview with Rod Stewart in which he told me his goal in life was to perform his *Mandolin Wind* (perhaps one of the most lovely songs of the last twenty years) onstage just like the record. On the basis of this new video, he has abandoned that goal in favor of arena-rock vaudeville moves and bombastic renditions of his recent Top 40 fodder.

Everything here is professional enough, to be sure. Stewart's new band may lack the personality of his old mates in the Faces (who are briefly glimpsed, along with the Jeff Beck Group, in some introductory footage), but they do their jobs, and the star is in pretty good voice (he tackles Otis Redding's *Dock of the Bay* and does not embarrass himself). He is also disposed to cavort in a more, shall we say, dignified manner than during his *Blondes Have More Fun* aging-stripper period. Still, you'll find that the whole thing is adequately directed and the sound is quite good. *L.M.*

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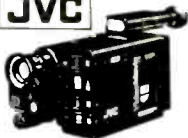
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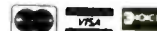
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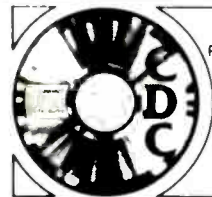
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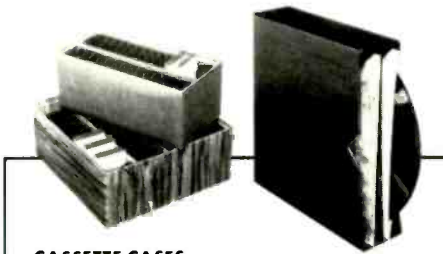
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EDITORIAL INDEX, 1986

Prepared by David Stein

EQUIPMENT TEST REPORTS (Hirsch-Houck Laboratories)

Amplifiers and Preamplifiers

Adcom GFA-555 (power), Nov. 43
Luxman LV-105 (integrated), Nov. 67
Naiad HiFidelivision—see Audio/Video
Proton D1200 (power), Sep. 47
Rotel RB-880 (power), Apr. 38
Soundcraftmen Pro-Power Four, Dec. 73
Tandberg TPA-3016A (power) and
TCA-3018A (preamplifier), Aug. 31

Audio/Video Equipment

Denon AVC-500 control center, Mar. 38
Naiad HiFidelivision F-20 integrated
amplifier, Jan. 46
Onkyo TX-RV47 receiver, May 40
Recoton V624 F.R.E.D. III stereo TV
decoder, Aug. 48
Vector Research V-5000 VHS Hi-Fi VCR,
Jun. 49

Car Stereo (Hirsch and Greenleaf)

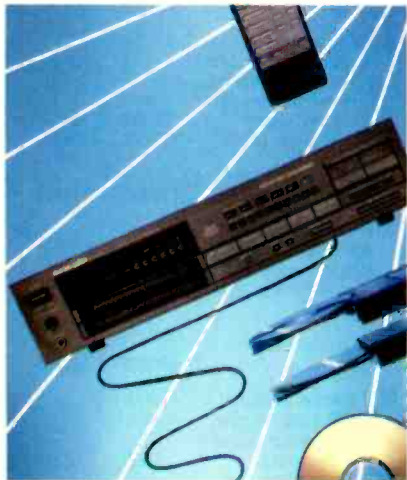
Aiwa CT-X500II cassette tuner (Smolen),
Dec. 26
Alpine 7900 tuner/CD player, Nov. 24
Harman Kardon CH160 cassette tuner,
Apr. 20
Hifonics Ceres IV parametric equalizer,
Oct. 24
Kenwood KRC-999 cassette tuner, Jun. 24
Sony CDX-A10 DiscJockey CD
changer/tuner, May 64
Soundstream TC-308 cassette tuner, Jul. 24

Cassette Decks

Harman Kardon TD392, Jun. 37
JVC DD-VR77, Sep. 50
NAD 6155, Jan. 36
Nakamichi CR-7A, Mar. 54; CR-5A, Oct. 46
Onkyo Integra TA-2056, Jul. 35
Revox B215, Aug. 40
Sansui D-705, Dec. 78
Teac V-750, Mar. 54
Yamaha K-1020, Mar. 54

Compact Disc Players

Akai CD-A70, Nov. 48
Bang & Olufsen Beogram CDX, Apr. 30
Harman Kardon HD500, Aug. 56
Hitachi DA-501, Feb. 43; DA-P100, Aug. 60
Magnavox CDB-650, Dec. 45



Pioneer PD-M6 changer, Jan. 33
Realistic CD-2000, Mar. 35
Sony CDP-203, Sep. 40
Teac ZD-5000, Oct. 35
Yamaha CD-2000, May 33

Headphones

AKG Acoustics K240DF, Nov. 73

Koss SST/7, Jun. 59
Stax SR-Lambda Professional, Apr. 43

Phono Cartridges

Shure Ultra 500, Apr. 42
Signet MK440ml, May 43

Receivers

Kenwood KVR-A90R, Mar. 47
Luxman R-406, Jul. 38
Nakamichi SR-3A, Dec. 59
Onkyo TX-RV47, May 40
Yamaha R-8, Feb. 31

Speaker Systems

Acoustat One + One, Jun. 60
ADS L780 Series 2, Oct. 38
Advent Legacy, Jul. 41
Allison LC110, Nov. 72
American Acoustics D8500, Jun. 40
B&W Matrix 1, Nov. 55
B.E.S. SM 80, Mar. 43
Bose 10.2, Apr. 34
John Bowers Active 1, May 47
Carver Amazing Loudspeaker, Dec. 94
Cerwin-Vega 250SE, Sep. 54
Energy ESM-3, Feb. 46
Fried Triplet, May 52
Infinity RS3000, Oct. 53
Jamo CBR 120, Aug. 46
JBL L100T, Sep. 35
Klipsch Forte, Jul. 48
Polk SDA-2A, Dec. 52
Thiel CS2, Jan. 41

Turntables

Dual CS 5000, Dec. 68
Revolver, Jul. 45
Thorens TD 320, Feb. 50

Other Equipment

Denon TU-600 AM/FM tuner, Nov. 60
Terk FM 8403 FM antenna, Mar. 52
Yamaha DSP-1 signal processor, Sep. 74

USER'S EVALUATIONS

Acoustic Research Powered Partners
(Smolen), Oct. 124
Audio Control Phase Coupled Activator
(Burton), Aug. 64
Ford/JBL car stereo system (Greenleaf),
Mar. 21
Fujiitsu/Celica car stereo system (Klein),
Jan. 22
General Electric Control Central
(Albertson), Jun. 104
Sansui SE-88 equalizer/analyzer (Smolen),
Jul. 134

THE HIGH END (Hodges)

An "Equalizer," Jan. 118
Digital Artifacts, Feb. 212
Tape Reversals?, Mar. 112
VTA Enlightenment, Apr. 104
A Micro-Ounce of Prevention, May 136
Krell and Cultural Immortality, Jun. 144
Audiophile Listening, Jul. 136
Matti Ojala and What We Don't Know,
Aug. 136
Another Way, Sep. 142
Speakers and Numbers, Oct. 128
Sound Decor, Dec. 200

TECHNICAL TALK (Hirsch)

FFT Loudspeaker Measurements, Jan. 26
Technical Terminology from dB to DIN-B,
Feb. 24
FMX: A Major FM Improvement, Mar. 27
"Power Envelope": A New Specification?,
Apr. 24
When Are Nonstandard Measurements
Justified?, May 29
Waits and Waveforms, Jun. 30
Optimistic Specifications: Amplifiers, Jul.
30; Tuners and Turntables, Aug. 26;
Loudspeakers, Sep. 30
What You Should Know About Digital
Sound, Oct. 30
The Pros and Cons of Integrated
Components, Nov. 30
What Is True Bass?, Dec. 30

TECHNICAL FEATURES

American Audio Companies (Burton), Jun.

78: The State of the Nation's Audio
(Birchall), Jun. 64
Amplifier, How to Buy an (Mitchell),
Nov. 76
Audio Rectification—see Haunted Hi-Fi
Audio's Near Misses (Masters), Dec. 102
Car Stereo: What's New in (Sweeney), May
58; Tips on Buying (Sell), May 68;
Manufacturers, May 71; On the Road
with Digital Music (Greenleaf), Oct. 64



Cassette, The Prerecorded (Hodges), Jan. 61
CES Show Stoppers: Las Vegas (Sell), Apr.
47; Chicago (Smolen), Sep. 67
Compact Discs: Do All CD Players Sound
the Same? (Masters), Jan. 50; How to Buy
a CD Player (Livingstone), May 76; The
Magic of CD Manufacturing (Birchall),
Oct. 67; The New Players (Petras), Oct. 59
Crossover Basics (Chinn), Sep. 64
The Dolby Systems (Meyer), Dec. 99
Equalizers (Smolen), Dec. 82
Equipment Buying Guide (Burton and staff),
Feb. 67
European Audio Technology (Meyer and
Mitchell), Aug. 68
FM Multipath (Klein), Nov. 98
Happy Hi-Fi Holidays (staff), Dec. 87
Haunted Hi-Fi (Berger), Nov. 120
Headphones (Meyer), Jun. 95
Hi-Fi Landmarks (Hirsch), Sep. 94
Hi-Fi VCR's: Buying Guide (Smolen,
Burton, and staff), Apr. 61; Listening
Tests (Clark), Apr. 54
Hirsch, Julian: Silver Anniversary (Smolen),
Sep. 81
Japan Audio Fair (Harrell), Jan. 65
Japanese Audio Technology (Harrell), Jul.
52; [Japanese Products] Made in the
U.S.A. (Burton), Jul. 80
Loudspeakers, How to Buy (Burton),
Sep. 58
Pocket Stereo (Petras), Mar. 60
Receiver, How to Buy a (Gordon), Jul. 84
Remote Control, Unified (Burton), Nov. 92
Rodrigues Cartoon Contest, Jan. 17, Jul. 28
Speaker Placement (Klein), Sep. 61
Stereo TV, How to Get at Home (Gordon),
Aug. 95
Systems: An American Dream (Smolen),
Jun. 74; Japanese Eclectic (Burton),
Jul. 82
Tape: Buying Guide (Burton and staff),
Mar. 65; Three Top Tape Decks (Stark),
Mar. 54
Videocassettes, The Care and Storage of
(Klein), Aug. 100
Videodisc Players (Albertson), May 26

BEST OF THE MONTH

Classical
Bach: *The Well-Tempered Clavier*, Book 1,
Nov. 102
Beethoven: Piano Concertos Nos. 3 and 4,
Jun. 108; Piano Concerto No. 5, Oct. 83;
Piano Sonatas Nos. 2 and 4, Aug. 107
Brahms: *A German Requiem*, May 83
Britten: *Sinfonia da Requiem*, Two
Overtures, Suite on English Folk Tunes,
Sep. 101

Bruckner: *Te Deum*, May 83
 Dvořák: *Symphony No. 8, Scherzo capriccioso*, Aug. 103
 Elgar: *Violin Concerto*, Jan. 71
 Handel: *Roman Vespers*, Oct. 86
 Liszt: *Via crucis*, Dec. 112
 Mahler: *Symphony No. 2*, Feb. 177;
Symphony No. 5, Apr. 70
 Mendelssohn: *Symphonies Nos. 1-5, Overtures*, Jul. 96
 Mozart: *Arias*, Nov. 101; *Piano Sonatas*, Jul. 93
 Offenbach: *La belle Hélène*, May 86
 Purcell: *Dido and Aeneas*, Sep. 99
 Respighi: *Fountains of Rome; Pines of Rome; Roman Festivals*, Mar. 73
 Rossini: *Il viaggio a Reims*, Jun. 107
 Schubert: *Piano Sonata in B-flat Major, Allegretto, Impromptu*, Feb. 178
 Schumann: *Kreisleriana*—see Horowitz
 Verdi: *Un ballo in maschera*, Apr. 69;
Rigoletto, Mar. 76

Fernández, Eduardo: *Guitar Recital*, Jan. 74
 Horowitz, Vladimir: *The Studio Recordings*, Dec. 109

Popular

The Bangles: *Different Light*, Jun. 110
 Cactus World News: *Urban Beaches*, Oct. 83
 Cash, Johnny: *Rainbow*, Mar. 73
 Dylan, Bob: *Biograph*, Mar. 74
 Earle, Steve: *Guitar Town*, Sep. 99
 The Everly Brothers: *Born Yesterday*, Apr. 72
 The Fabulous Thunderbirds: *Tuff Enuff*, May 83
 Glass, Philip: *Mishima*, Feb. 178; *Songs from Liquid Days*, Jun. 107
 Jackson, Joe: *Big World*, Aug. 107
 The Judds: *Rockin' with the Rhythm*, Feb. 177



McEntire, Reba: *Whoever's in New England*, Jul. 93
 Morrison, Van: *No Guru, No Method, No Teacher*, Nov. 102
 Prefab Sprout: *Two Wheels Good*, Jan. 72
 Ridgway, Stan: *The Big Heat*, Jul. 94
 Simon, Paul: *Graceland*, Dec. 110
 Simply Red: *Picture Book*, Aug. 103
 The Smithereens: *Especially for You*, Nov. 101
 Streisand, Barbra: *The Broadway Album*, Apr. 69
 Sweethearts of the Rodeo: Dec. 109
 Tonio K.: *Romeo Unchained*, Sep. 100
 Wainwright, Loudon, III: *I'm Alright*, May 84
 Waits, Tom: *Rain Dogs*, Jan. 71
 Williams, Hank, Jr.: *Montana Cafe*, Oct. 88

SPEAKING MY PIECE (Livingstone)

The Ears of Klein, Jan. 4
 Simplicity, Feb. 4
 Professionals, Mar. 8
 Consumer Electronics Show, Apr. 8
 Gordon Sell, Technical Editor, May 8
 Audio in America, Jun. 8
 Made in Japan, Jul. 8
 Imported from Europe, Aug. 8
 Speakers and CES, Sep. 4

Louise Boundas, Managing Editor, Oct. 4
 Biting Back, Nov. 8
 Means and Ends, Dec. 8

MUSICAL FEATURES

All That Glitters: RIAA Awards (Barter), Sep. 28
 Analog to Digital: Remastered CD's (Seligman), Nov. 85
 Atlantic Rhythm-and-Blues 1947-1974, Volumes 1-7 (Albertson), May 113
 Babbitt: *Piano Works* (Freed), Aug. 120
 Bach: *Cello Suites* (Freed), Jan. 91
 The Basic Repertoire on CD (Freed), Sep. 71; Oct. 79
 The Beatles: *Live on Ready Steady Go!* (Meredith), May 121
 Beethoven: *Piano Concerto No. 3*, and *Mozart Fantasia* (Hall), Aug. 117; *Piano Concertos Nos. 1-5, Choral Fantasy*—see De Larrocha; *Quintet for Piano and Winds*—see Previn
 Berry, Chuck: *Rock 'n' Roll Rareties* (Simels), Sep. 110
 Britten: *Peter Grimes* (Ackart), Dec. 183
 Browne, Jackson: *Lives in the Balance* (Simels), Jun. 116
 Bush, Kate: *Hounds of Love* (Peel), Jan. 77
 Charles, Ray (Albertson), Feb. 55
 Choice CD's, Apr. 51
 Chopin: *Preludes, Op. 28*—see Pianists
 Christmas, Music for (Barter), Dec. 150;
Happy Hi-Fi Holidays (staff), Dec. 87
 The Clash: *This Is Video Clash* (Meredith), Aug. 123
 The Costello Show: *King of America* (Simels), Jun. 113
 Crowell, Rodney: *Street Language* (Nash), Dec. 156
 The Cult: *Love* (Peel), Jul. 107
 David + David: *Boomtown* (Peel), Dec. 168
 De Larrocha, Alicia, in Beethoven *Piano Concertos* (Salzman), Nov. 168
 Denny, Sandy: *Who Knows Where the Time Goes?* (Simels), May 107
 Don't Look Back (Meredith), Sep. 129
 Dutoit, Charles (Hemming), May 73
 Dvořák: *String Quartets Nos. 9 and 10* (Freed), Dec. 134
 Earle, Steve (Nash), Nov. 158
 Europop (Simels), Aug. 92
 Gabriel, Peter: *So* (Peel), Sep. 103
 Horowitz, Vladimir: *The Last Romantic* (Freed), Jul. 99
 Jones, Marti: *Match Game* (Simels), Dec. 153
 Joplin: *The Easy Winners*—see Previn
 The Judds (Nash), Dec. 92
 Katrina and the Waves: *Waves* (Simels), Aug. 111
 Liszt on Records (Freed), Jul. 89
 Madonna: *True Blue* (Peel), Nov. 123
 Marsalis, Wynton: *Trumpet Concertos by Tomasi and Jolivet* (Freed), Oct. 93
 MCA Impulse Jazz (Albertson), Dec. 180;
 MCA Master Series (Nash), Oct. 110
 Miami Vice (Garland), Mar. 89
 Mitchell, Joni (Nash), Mar. 69
 Mozart: *Fantasia in C Minor*—see Beethoven; *Coronation Mass in C Major* (Freed), Oct. 100; *Quintet for Piano and Winds*—see Previn
 New Age Music on CD (Smolen), Dec. 160
 New York Vocal Arts Ensemble: *Listen to the Mocking Bird* (Livingstone), Jun. 128
 Ortiz, Cristina: *Rachmaninoff's Second Piano Concerto*, Addinsell, Litloff, and Gottschalk (Freed), Nov. 161
 Perkins, Carl: *Blue Suede Shoes* (Meredith), Nov. 183
 Petty, Tom, and the Heartbreakers: *Pack Up the Plantation—Live!* (Nash), Apr. 75
 Pianists, A Tale of Two (Freed), May 99
 Pogorelich, Ivo—see Tchaikovsky
 Pope John Paul II—see Mozart: *Coronation Mass*
 Poulenc: *Piano Works, Vol. 4* (Freed), Jun. 123
 Previn, André, *Three by (Freed)*, Feb. 183
 Rachmaninoff: *Piano Concerto No. 2*—see Ortiz; *Symphony No. 2*—see Previn



Record of the Year Awards, Feb. 60
 Reed, Lou: *A Night with Lou Reed* (Meredith), Jan. 103; *Mistrial* (Simels), Oct. 106
 The Replacements: *Tim* (Simels), Feb. 191
 Riders in the Sky: *Saddle Pals* (Nash), Feb. 200
 The Rolling Stones: *Dirty Work* (Meredith), Jul. 110
 Schubert: *Death and the Maiden Quartet*, orch. Mahler (Freed), Dec. 129;
Winterreise, *Piano Sonata in C, D. 840* (Freed), Sep. 124
 Schumann: *Symphonic Etudes, Op. 13*—see Pianists
 The Smiths: *The Queen Is Dead* (Peel), Oct. 103
 Squeeze—Together Again (Ferrari), Jan. 58
 Stereo TV: *The New Season* (Livingstone), Nov. 83
 R. Strauss: *Der Rosenkavalier Suite and Die Frau ohne Schatten*, *Symphonic Fantasy* (Freed), Apr. 83
 Sullivan, Maxine: *An American Classic* (Albertson), Jun. 99
 Swing Reunion (Albertson), Mar. 98
 Tachino, Gabriel—see Poulenc



Talking Heads (Ferrari), Nov. 90
 Tchaikovsky: *Piano Concerto No. 1* (Freed), Sep. 119
 Thompson, Richard: *Across a Crowded Room* (Meredith), Apr. 91
 Townshend, Pete: *White City—The Music Movie* (Meredith), Jun. 131
 Vaughan Williams: *Sinfonia antartica* (Freed), Mar. 79
 The Velvet Underground: *Another View* (Simels), Oct. 106
 Wagner's Ring Cycle on CD (Livingstone), Jan. 100
 Williams, James: *Progress Report* (Albertson), Jul. 116
 Winwood, Steve: *Back in the High Life* (Peel), Nov. 133



by Christie Barter
& Steve Simels



FREY ROBERT'S

Gabriel: good works

PETER GABRIEL is no stranger to good causes, as anybody who caught this year's Amnesty International benefit concerts already knows, and in another spasm of conscience he performed at the first annual Day of Peace, a United Nations function now scheduled for the third Tuesday of September in per-

ONE of our favorite CD's-for-Christmas is a coupling of two works by the seventeenth-century French composer Marc-Antoine Charpentier—a Christmas oratorio and a *Pastorale* on the birth of Christ, performed in "authentic" style by a group called Les Arts Florissants, founded and conducted by the American early-music specialist William Christie. The compact disc is a compilation drawn from two LP's in the Harmonia Mundi catalog.

Christie and his group (named for a work by Charpentier titled *Les Arts florissants*) have just completed their first American tour, but they generally stay pretty close to their headquarters in Paris. In a recent concert in the Parisian suburb of Versailles, they put on period costumes to perform a program of French Baroque music at the famous palace built there by Louis XIV.

Christie's discography, as both a conductor and a solo harpsichordist, is extensive—and all on Harmonia Mundi. He's featured in both roles in two albums forthcoming

another, and she declines to stick only to opera. Her recent album of pop standards, "Blue Skies" on London, was a big hit, and so was the Deutsche Grammophon recording of *West Side Story* in which she participated. She



Te Kanawa: favorites

is featured on a new recording of *South Pacific* for CBS Masterworks, and her album of Gershwin standards will be released by Angel next year.

On the cover of her latest London record she is dressed and coiffed to look like one of the Judds, but instead of country music it is an album of favorite Christmas songs. Asked why she bothers to record nonclassical music, she said, "I began singing popular music when I was very young back in New Zealand, and I continue to do so because I enjoy it. I also think it helps to build audiences for opera. People who have heard me sing Gershwin or Cole Porter are less likely to feel intimidated about coming to hear me at the opera house in Puccini or Strauss." □

ized representation of a vacuum tube, an object from the dawn of the Electronic Age. All Audion releases will be digitally mastered and issued on LP as audiophile pressings, as well as on chrome cassettes and compact discs. The initial release includes albums by Emerald Web, Barry Cleveland, Neil Nappe, and Don Slepian. □

THE harpsichordist Igor Kipnis (who used to be a STEREO REVIEW contributing editor) made no fewer than five recordings for as many labels in the past twelve months. Just released is "A Treasury of Harpsichord Favorites," which Kipnis recorded for Music and Arts Programs of America, an organization based in Berkeley, California. This recital is available only on a compact disc, with just over seventy-one minutes of playing time. Another new CD-only release is a Mozart album under the Centaur imprint in which Kipnis performs on a 1793 fortepiano from his own collection of early instruments.

The three other recordings Kipnis made this year include a collection of gamba sonatas by Bach in which he accompanies cellist Lynn Harrell; recorded by English Decca, it is due for release here on the London label. He also recorded all the fantasias and fugues of Bach for Arabesque and an album on the CRI label devoted to works by the American composer Barbara Kolb, including a Toccata for Harpsichord and Tape she wrote especially for him.

Fast: new label

JEM Records has announced the formation of the Audion Recording Company, whose catalog will be marketed and distributed by Jem. The Audion label will be exclusively devoted to state-of-the-art electronic instrumental music. "The first wave of the Next Age," according to electronic-music wizard Larry Fast (a longtime collaborator with Peter Gabriel and renowned solo artist under the name Synergy), who will head Audion's A&R department.

The Audion logo is a styl-



JEAN-LUC HURÉ

Christie: period music in period costume at Versailles

petuity. Proving, however, that charity begins at home, Gabriel's music is also prominently featured in *Playing for Keeps*, the recently released and utterly rancid teen comedy about a bunch of kids who open a rock-and-roll hotel. The soundtrack features contributions from Pete Townshend (who has likewise done shows for Amnesty) and Julian Lennon (who hasn't). □

from that label: a coupling of cantatas by Charpentier's contemporary André Campra and an album of harpsichord music by Luigi Boccherini. □

THERE seems to be no such thing as an exclusive recording contract these days for the big opera singers. Dame Kiri Te Kanawa has appeared on all the major classical labels at one time or



JEM RECORDS

LONDON RECORDS



JEREMY KIPNIS

Kipnis: busy

What next? "Maybe an album of jazz and ragtime," says Kipnis. This is music he often includes or uses for encores in his recital programs. "Even German critics appear to be intrigued by the idea of my playing jazz on the harpsichord. They're very fond of Brubeck!" □

THERE's a lot of hype about Madonna as the new Marilyn Monroe. She may be the new Jean Seberg, but Marilyn? No way! Our candidate for the new Monroe honor has always been Blondie's **Debbie Harry**. Unfortunately, Ms. Harry has been missing in action for a couple of years, spending most of her time tending to ailing boyfriend (and Blondie guitarist) **Chris Stein**, but we are happy to report that she will be before the public again momentarily. Look for a new solo album on Geffen, and those of you who like to see the platinum-blond New Wave icon as well as hear her should check out her forthcoming appearance on the syndicated TV thriller *Tales from the Darkside*. □

THE fledgling NBC Television Network introduced **Gian Carlo Menotti's** opera *Amahl and the Night Visitors* on Christmas Eve in 1951 and presented it live for eleven consecutive seasons thereafter. Seen infrequently on television these days, it has just become available on videotape in a production taped in London in 1978 under the composer's supervision. Rob-

SCOTT WEINER/RETNA LTD.

VIDEO ARTS INTERNATIONAL

ert Sapolsky sings *Amahl and Teresa Stratas* his mother, with **Nico Castel**, **Giorgio Tozzi**, and **Willard White** as the Three Wise Men. (White sang Porgy in this summer's highly acclaimed Glyndebourne Festival Opera production of *Porgy and Bess*.) **Jesús López-Cobos** conducts the Ambrosian Singers and the Philharmonia Orchestra in this Video Arts International release.

Menotti is the subject of a ninety-minute tribute, *The Musical Magician*, airing on PBS stations on November 21. And a week later the network is carrying the Washington (D.C.) Opera's world-première production of Menotti's new opera, *Goya*, taped at the Kennedy Center with **Plácido Domingo** in the role of the eighteenth-century Spanish painter. The com-

(?) rock films of all time have finally made it to home video. First up is *Kiss Meets the Phantom of the Park*, originally made for ABC back in the days when the **Kiss** guys wore make-up and nobody knew what they looked like (as opposed to today, when nobody cares what they look like). You can snag this little masterpiece from Worldvision Home Video. Meanwhile, on a slightly higher aesthetic level, RCA/Columbia is, at long last, unleashing the **Monkees' Head**. Often described as the group's version of *8 1/2*, *Head* features a script by **Jack Nicholson**, cameo appearances by **Frank Zappa**, **Annette Funicello**, and **Victor Mature** (as "Big Victor"), plus some surprisingly good music, including **Carole King's Porpoise Song**, one of the neater "Sgt. Pepper" pastiches ever waxed. □



Harry: back in action

poser is credited with the stage direction, and **Rafael Frühbeck de Burgos** conducts. □

ROCK cinéastes will be pleased to hear that two of the more obscure dramatic

Arzahl: Sapolsky, Stratas, Castel, Tozzi, and White



singles. First up: *I Confess*, currently out behind the album's title track; the next bonus cut, probably backing the album's *Knocking on Your Door*, will be a cover version of Rockin' Sidney's *My Toot Toot*, a tune Fogerty did on last year's Cinemax special. Collectors take note. □

GRACENOTES: Reebok, the sneaker people, and PolyGram Records are combining forces to promote the **Everly Brothers'** new single,



EBET ROBERT'S

Fogerty: back on the road

These Shoes. It's being sent to stores with a sticker including the Reebok logo. . . . **Giorgio Moroder**, who's had his hand in everything from old Donna Summer albums to the restoration of Fritz Lang's *Metropolis*, has started a new movie soundtrack production company. The first project for what Moroder calls the MusicTeam will be a score for **Sylvester Stallone's** forthcoming *Over the Top*, in which Stallone plays (no kidding) a contestant in an arm-wrestling contest. . . . Australia's **Big Time Records** will henceforth be distributed in the U.S. by RCA. The label's roster includes such cult favorites as **Alex Chilton**, **Love Tractor**, and the **Expanding White Mice**, as well as "Red Wave," a double LP compilation of rock music from Russia. . . . Among the first salvos in public television's salute to the holiday season: *Christmas with the Mormon Tabernacle Choir* and *Shirley Verrett*. The primary airdate is Sunday, December 14. Merry Christmas! □

NEW PRODUCTS



Audio Research

Rated at 300 watts minimum continuous power into 8 ohms from 16 to 25,000 Hz with less than 0.5 percent total harmonic distortion, the M300 mono power amplifier from Audio Research uses field-effect transistors in the input stage and eight partially cathode-coupled vacuum tubes in the output stage. Its cross-coupled circuit is said to produce exemplary stability, reliability, and superior performance. An automatic muting circuit prevents thumping when the amplifier is switched on or off. Inputs are gold plated, and output taps are provided for 1-, 2-, 4-, and 8-ohm speakers. Efficiency is "up to 60 percent and above," with power-supply energy storage of about 350 joules. Price: \$4,900. Audio Research, Dept. SR, 6801 Shingle Creek Parkway, Minneapolis, MN 55430.

Circle 127 on reader service card

Sanyo

Sanyo's VHR2900 VCR can record and play back VHS Hi-Fi soundtracks, receive and process stereo TV broadcasts, and play Dolby-encoded stereo videotapes. Switching in the Dolby noise reduction during playback is said to reduce tape hiss by 10 dB. The dynamic range of the VHS Hi-Fi soundtracks is rated at 80 dB.

The built-in frequency-synthesis tuner can receive 110 channels. Eight events over one year can be programmed for unattended recording with the twenty-function remote control. Channel, date, tape count, and transport mode are displayed on the video screen. To power a TV set or another component, the VHR2900 has a built-in AC convenience outlet. Price: \$719.95. Sanyo, Dept. SR, 1200 W. Artesia Blvd., Compton, CA 90220.

Circle 128 on reader service card



Fisher

Built-in 30-watt amplifiers enable the four models in Fisher's new STA speaker line to be used directly with sound sources having RCA-type output jacks, such as portable CD players, pocket radios or tape players, and many stereo TV sets. The STA-226 has an 8-inch woofer and a 3-inch tweeter; the STA-341, STA-361, and STA-381 (shown) all have an 8-inch woofer, a 4-inch mid-range, and a 3-inch tweeter. Magnetic shielding is built into the speakers to

prevent video distortion on nearby TV's or monitors. Each speaker has its own volume and tone control.

The amplifiers are rated at 30 watts per channel rms into 8 ohms from 40 to 20,000 Hz with no more than 0.1 percent total harmonic distortion. The speakers are 10.2 x 11 inches at the base, and they range from 19 to 25.6 inches in height. Price (all four models): \$399.90 per pair. Fisher, Dept. SR, 21314 Lassen St., Chatsworth, CA 91311.

Circle 129 on reader service card





Shure

The Shure AVC20 Power Station is an integrated amplifier for audio/video systems that features a built-in Dolby Surround decoder, stereo synthesis, and remote control. It can route video and audio signals to one or two TV monitors as well as up to six speakers. There are four 30-watt power amplifiers, each with its own volume control, that can be bridged to deliver 60 watts per pair into two channels. Two unpowered out-

puts, for a center-dialogue speaker and a subwoofer, are included.

The AVC20 has two tape loops for audio or audio and video signals as well as one for audio only. A pre-out/pre-in loop allows separate sound processors to be used. The amplifier has one line-level input and one phono input. In addition to Dolby Surround, two other modes create special ambience effects. Price: \$599. Shure, Dept. SR, 222 Har- trey Ave., Evanston, IL 60202-3696.

Circle 130 on reader service card

Onkyo

Onkyo's 200-watt Grand Integra M-508 is a dual-mono power amplifier with separate power supplies, amplifier stages, and heat sinks for each channel. It has a large main transformer and a smaller secondary transformer to eliminate voltage fluctuations that are said to reduce bass impact and stereo imaging. Output is rated at 200 watts per channel rms into 8 ohms, with a dynamic power output into 2 ohms of more than 700 watts per channel. Protection circuits

prevent damage to the amplifier or to speakers without limiting normal musical peaks.

The M-508 has two precision power meters. There are two sets of inputs, one direct and one variable set for use with multi-amplified systems. Two pairs of speakers can be connected to the five-way dual-banana-plug binding posts, and they can be driven either separately or simultaneously. The M-508 is finished in black with wood side panels. Price: \$1,100. Onkyo, Dept. SR, 200 Williams Dr., Ramsey, NJ 07446.



More New Products on page 15

ADVERTISERS' INDEX

READER SERVICE NO.	ADVERTISER	PAGE NUMBER
18	Acoustic Research	77
18	Acoustic Research	145
52	Alpine Electronics	142-143
20	Audio-Technica	173
23	Audio-Technica	173
51	B&W Loudspeakers	152
	Bose Corporation	54-55
	Bose Corporation	65
	Boston Acoustics	44
	Boston Acoustics	69
49	Carver Corporation	21
49	Carver Corporation	31
26	CBS Compact Discs	33
5	CBS Records	111
	Columbia House CD Club	29
11	Concord Electronics	147
68	Cooustic	25
	Crutchfield Corporation	32
	DAK Industries	34-43
	DAK Industries	114-127
61	Dash 11 Designs	172
	Delco Electronics	113
27	Denon Enterprises	60-61
71	Discount Music Club	181
10	Discwasher	20
10	Discwasher	28
10	Discwasher	171
25	Electronics R Us	178
12	Epicure Products	58
21	Fujitsu Ten	72
63	GE Audio	128
	Harman Kardon	108
13	Hitachi	C3
	Illinois Audio	179
	Infinity	14
39	J&R Music World	176-177
	JB	133
24	Jensen	163, 165
	Kenwood	11
2	Klipsch & Associates	17
73	Koss	51
30	Labelle Camera & Stereo	185
	Magnat Electronik	19
58	Magnavox	107
45	M&K Sound	169
	Manhattan Records	170
	Marlboro	46-47
22	McIntosh Laboratory, Inc.	151
50	Mission Electronics	148, 149
	Mitsubishi Electric Sales	66-67
59	Motown Records	157
	NEC	71
	NEC	155
	Onkyo	131
9	Panasonic	159
28	Phase Linear	141
55	Pioneer Electronics	C2-1
65	Pioneer Electronics	137
37	Polk Audio	6-7
3	PolyGram Classics	24
3	PolyGram Classics	140
3	PolyGram Classics	146
3	PolyGram Classics	175
35	Pyle Industries	167
	Radio Shack	2
	Radio Shack	135
	RCA Direct Marketing	23
	RCA Direct Marketing	166
38	Recoton	57
	R. J. Reynolds-Vantage	63
	R. J. Reynolds-Winston	79
44	Sansui	4, 53
54	Sennheiser Electronics Corp.	181
53	Sony Tape	12-13
42	Sony TV	138-139
48	TDK Electronics	161
66	Teac Corp. of America	49
1	Technics	74-75
57	Toshiba America, Inc.	167
	Triad	81
	Wisconsin Discount Stereo	182
14	Yamaha	9
60	Zenith	C4

DECEMBER

by Ralph Hodges



Sound Decor

I HAVE to move. And therefore I face a question crucial to my well-being: Where, in the new and untested environment, do I put the loudspeakers?

Contemporary high-end thinking dictates that loudspeakers should be put nowhere—that is, nowhere near any wall, floor, or ceiling that defines a boundary of the acoustical environment. This theory gets strong technical support from work done on live-end/dead-end control rooms in recording studios, and those who have put it into practice in domestic situations generally report pleasing results. It should be kept in mind, however, that the directivity of studio monitors rarely resembles that of home speakers, and speakers moved very far away from the walls in many living rooms will quickly wind up within a foot or two of your lap. Therefore, a wall, let's call it a "reference wall," is usually going to be involved.

The reference wall should be the stiffest one in the room. In older apartments and houses, the stiffest wall is almost always an outside wall, and, happily enough, it is almost never adjoined by doorways and other acoustical complications. There may be a window or two, but windows are rarely big enough to offset the advantages of solid masonry, and if they let in street noise,

the annoyance will probably be diminished when they're close to the source of the desired sound rather than behind or to the side of the listening position.

The backs of the loudspeakers should always be facing, if not against, the reference wall. If the stiff reference wall is on the *other* side of the room, wavelengths related to room dimensions will encourage the formation of resonant room modes emphasizing discrete low frequencies. But if the speakers are close to the stiff wall, *all* low frequencies will be supported with reasonable equality, and the reflection from the other walls will be less likely to set up dimensional resonances.

Speaker positioning, then, might be narrowed down to one or two possible walls. Even when the stiff wall is a short one, it should still be tried first, perhaps by placing the sides of the speaker cabinets against the longer adjoining walls and a third of the way out into the room.

The next step is furnishing the room according to your taste and finding out how it sounds—which is usually harsh, bright, and glaring, especially if you've adapted your decoration scheme from a magazine advocating minimalist interiors. You may have serious acoustic demons to exorcize.

Usually you'll read that harsh sound is the result of too little high-frequency absorption, but that's almost never so. It's almost impossible to have too little high-frequency absorption. High-frequency sound waves get soaked up by anything, including the air they travel through. As veteran speaker manufacturer Paul Klipsch once said, "If you can't see the tweeter, you can't hear it," meaning that room acoustics have no audible effect, for better or worse, on frequencies above about 8,000 Hz.

More often the problem is too little absorption of the *upper mid-range* (typically 3,000 to 7,000 Hz), and most often its cause is all that untreated reflective surface in the upper walls and the ceiling. I won't go into the mathematics involved, but it has been satisfactorily established that the control of reverberation depends not on the overall amount of absorptive material pres-

ent in a room, but on the *ratio* of absorptive to unabsorptive surfaces, in square feet, that the interior of a room presents. Few living rooms have more than half of their surfaces treated so that significant absorption occurs. As a result, they sound unpleasant when the violins reach for the skies—even if the equalization of the recording is within reason.

That's the bad news. The good news is that when you are confronted with harsh room sound, you don't have to consider the purchase of an overstuffed Chesterfield sofa. Instead, you can think about installing some inexpensive and tasteful ceiling treatment, and you needn't worry much about overdoing the absorption. The real high frequencies will not be affected, and powerful low frequencies won't be soaked up even by the heaviest ceiling-to-floor brocade draperies. Broadband absorption can be applied liberally and, within practical limits, with fairly good results.

A relatively inexpensive but very

If your living room follows a design scheme from a magazine advocating minimalist interiors, you may have some serious acoustic demons to exorcize.

effective treatment I've encountered involves Sonex, an acoustically absorptive foam, cut into foot-square panels. You glue pairs of panels back to back, to keep the molded patterns facing outward, and then stick them edge-on to the ceiling. A well-planned pattern can actually enhance almost any decor, (well, some people will prefer, in these circumstances, to keep ceiling illumination to a minimum). It is astounding how few of these panels, applied at the right places, can transform an ugly acoustical situation into a most agreeable one. It is also astounding to see how many audiophiles who have used this treatment, and are happy now with the sound of their listening rooms, go out and buy bigger amplifiers to create even *more* sound. That's the penalty of audiophilia. □

MASTERPIECE:

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Like our new CD player with built-in dual-cassette deck and AM/FM Digital Receiver. Compact disc performance and tape versatility, together at last. TV monitors with

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broadcast stereo reception that rival the finest high fidelity systems. And Hi-Fi/HQ video recorders so incredibly advanced, they'll shock your senses.

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The Zenith logo features the word "ZENITH" in a bold, italicized, sans-serif font. A stylized lightning bolt graphic strikes the letter "I".

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mid-range and treble harmonics. All shaped into astonishingly true-to-life stereo images that complement the picture beyond the capabilities of separate component systems.

Next, deep bass with exceptional clarity is added by exclusive Bose Waveguide technology. Its power and emotion make you feel surrounded by on-screen action, even at low levels. With virtually no distortion, even at earth-shaking volumes.

Finally, instead of the old-fashioned loudness button, an exclusive dynamic equalization circuit automatically adjusts the level of bass sound to give you natural tonal balance with extraordinary richness and clarity at all volume levels and viewing positions.

And because it's digital, Zenith's 27" square-cornered picture brings you sharper, more vibrant colors than ever

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